Building a Portal with Lotus Domino R5

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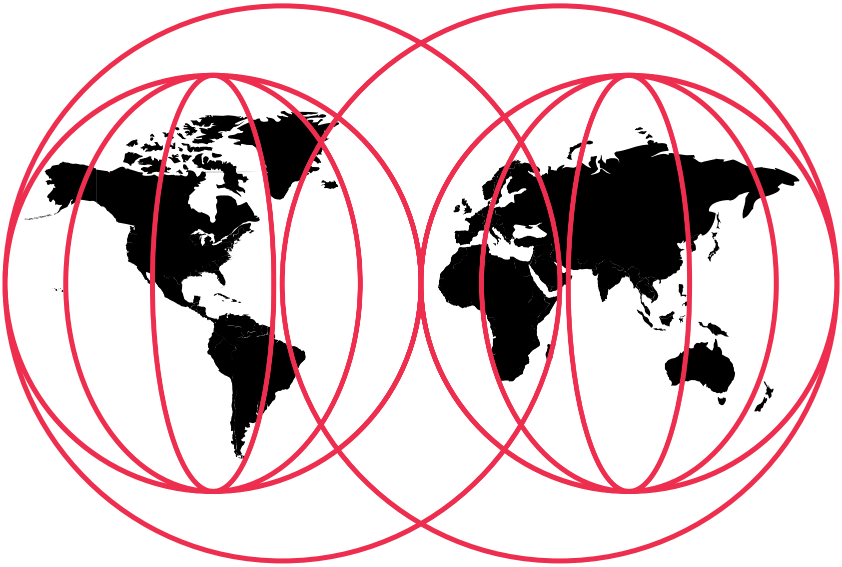

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Building a Portal with Lotus Domino R5

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First Edition (October 1999)

This edition applies to Lotus Domino Release 5.0.1.

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Preface

This document describes how to develop a portal using Lotus Domino Release 5.0.

The first section of the paper defines what a portal is, while in the second section, we show you, step by step, how to create your own portal using Lotus Domino R5. In the final section, we discuss what is on the horizon for using Lotus Domino as a platform for portals.

The Team That Wrote This Redpaper

This redpaper was produced by a team of specialists from around the world working at the International Technical Support Organization Center at Lotus in Cambridge, Massachusetts, USA.

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Martin Buckley has been at Lotus for the past six years, the last four years as a Systems Engineer with the Australian Northern Region Sales team. Apart from a deep, intimate technical knowledge of Lotus software and solutions, which Marty advocates to our customers so well, he is one of the two Lotus Australia and New Zealand webmasters, is a guide for The KNAC Knowledge Navigator AP Technical Sales Page, and is creator and developer of the Lotus ANZ Portal.

Steve Cappo is a Senior Product Marketing Manager responsible for leading Lotus Knowledge Management product marketing and establishing Notes/Domino as the world's premier KM platform. Steve recently joined the Lotus product marketing team after a distinguished career in Lotus product management, where he played an instrumental role in the evaluation and acquisition of Lotus Sametime technology. Steve joined Lotus in 1990 and has served in a variety of positions in services, sales and product management. His achievements at Lotus include working with Lotus/IBM sales force and customers spearheading the knowledge transfer of Lotus communications products and positioning. A graduate in computer science

and technical writing, he previously worked as a computer consultant at various campuses on the west coast.

A number of people have provided support and guidance. In particular, we would like to thank the following people from Lotus Cambridge (unless otherwise noted):

- Stephanie Radcliff
- Alessandro Patrignani, Milan, Italy
- Roberto Boccadoro, Milan, Italy

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Section 1
Domino/Notes R5 and Portals

Introduction

With the introduction of Lotus Domino R5, businesses are seeing the advantages of building portals of all types, targeted to diverse audiences, on the Lotus Domino R5 platform.

This redpaper describes the techniques to create an effective, customizable portal for both Lotus Notes clients and Internet browser clients using the Domino R5 platform. First, it briefly describes what a portal is and how a broad, diverse set of content and tools filtered through a portal application, and then targeted at a specific audience, can enhance a group's overall responsiveness, innovation, competency and effectiveness. Then it presents step-by-step instructions on how to design and create portals. Finally, this paper discusses the future opportunities for portals and knowledge management on a Domino R5 platform, and how to best position your organization to take full advantage of them.

What is a Portal?

Earlier this year, I was talking with a friend when the topic of portals came up. I started to explain what I thought a portal was and why they are so important, but I quickly realized I was not describing a portal, but instead was describing a *type* of portal, such as an enterprise information portal. I was describing specific applications of portal technology, but hadn't answered the question — What is a portal?

Next, I found myself picking up an imaginary pen and starting to draw boxes on an imaginary advanced user interface, and explaining that a portal was my start here page, with e-mail, news feeds, important applications, etc. It was the perfect organization of the important people I need to collaborate with, places I need to visit or pay attention to and things I wanted to, or should be reading. I suddenly realized I was describing the type of content and tools I wanted to see on my desktop, but not necessarily a portal.

So what is a portal? And, what makes a portal a portal and not an HTML page with framesets?

It was not obvious, or easy for me to explain the requirements and functions of a portal — the application. I decided to refine my understanding and embark on a quest for answers. I began by investigating the portal projects under way across Lotus and IBM, looking at other vendors' products available on the market, as well as reviewing what the press and analysts were reporting.

One of the first reports I reviewed was from the Delphi Group, which characterized types of portals by identifying the intended audience. Delphi identified four major audience types:

1. **Publishing** portals target large and diverse communities with disparate interests. These portals tend to follow a fairly traditional metaphor which involves relatively little customization of content, except for online search and limited interactive capabilities, expected by the casual Web user (broadcasting).
2. **Commercial** portals offer the possibility of narrowing content for potentially multiple diverse audiences.
3. **Personal** portals deliver specific filtered information for individuals (narrowcasting).
4. **Corporate** portals coordinate rich content within a relatively narrow community which unites around a group mission.

This was the approach I and most people had taken to describe a portal. Another report, from Gerry Murray of IDC, caught my attention. The report described four stages of portal evolution based on the type of content and tools that are exposed to the user:

1. **Information** portals connect people with information.
2. **Collaborative** portals provide collaborative computing capabilities of all kinds.
3. **Expertise** portals connect people with other people based on their abilities, expertise and interests.
4. **Knowledge** portals combine all of the above to deliver personalized content based on what each user is actually doing.

This made sense to me. My experience in collaboration, Lotus' research with respect to expertise location and my new understanding of knowledge management gave me the same perspective as Gerry's. But, I was still trying to identify the unique features that made a portal a portal.

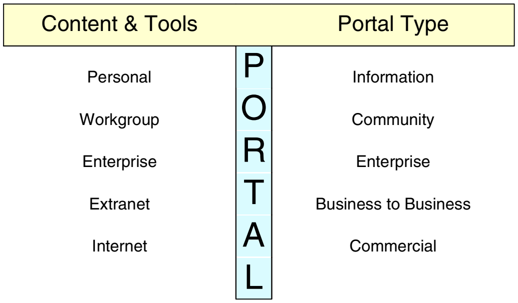
What makes a portal a portal

After endless conversations, hundreds of imaginary drawings and exhaustive review of analyst's reports, I felt my quest was over and my understanding of portals complete.

A portal is an application or device that provides a personalized and adaptive interface for people to discover, track and interact with other relevant people, applications and content. I discovered a portal is very different from that simple HTML page with framesets, because it possesses these distinguishing features:

1. **P**ersonalization for end user's is the most critical feature. A portal must deliver a personal or community desktop to users by establishing unique looks, content, and application interfaces and proactively rendering them based on the user's role in their community or by actively tracking the user's individual usage, interests and behaviors.
2. **O**rganization of the user's desktop to eliminate the information glut. Users want consolidated access to their important contacts, applications and content. The concept of stovepipe applications are a thing of the past. Organizations want easier control to design their desktop in a layout that suits them.
3. **R**esource division determines who sees what. Portals must have a membership services layer for user authentication, single-logon and credential mapping. Users demand the highest level of security, but the least amount of annoyance.
4. **T**racking of activity provides users with a payback for using the portal. The more users use the portal, the more it becomes tailored to specific interests and affinities the user may develop. While this may sound threatening at first, users will have the ultimate control over what gets tracked.
5. **A**ccess and display of aggregated multiple heterogeneous data stores, including relational databases, multidimensional databases, document management systems, e-mail systems, Web servers, news feeds, and various file systems/servers (e.g., audio, video, image, and so on). It's extremely helpful for users to see their e-mail, next to news feeds, beside a list of online users who can help understand information while maintaining a single context.
6. **L**ocation of important people and things. A portal is based on the basic desire of users to easily find information and people by searching or navigation. There must be a means of passively or actively discovering the experts, communities and content in a relevant context.

If developers succeed in incorporating all these capabilities into a single application they have built a basic portal design that can be targeted at all types of audiences and applied against a broad range of content and tool types.



Now that I knew what made a portal a portal, I was anxious to apply my understanding. I remembered seeing a great example of an enterprise information portal here at Lotus — something we called the ANZ portal. This Domino/Notes R5 based portal is the best example of an occupation-centric desktop that I could think of. Since I had just changed roles within Lotus (from Product Management to KM Marketing) I'd relied on this portal to learn about the new people, places and research materials for my new job. The developer, Martin Buckley, had done an excellent job of identifying the relevant content and links and delivering it to the right audience.

The next section of this paper is our step-by-step description of how to create a portal, using the one created by Martin as our example.

Section 2
A How-To Guide For Creating a Portal With Domino R5

This section explains how to create a portal with Lotus Domino R5. First, we discuss planning your portal structure and layout. We then show you a step-by-step example of how to build a portal.

Planning for a portal

The first step in building a portal is planning. This section describes the basic considerations concerning function, content structure, and layout of a portal. This will help you to plan a portal that truly satisfies your requirements.

Structure

A portal should be structured in such a way that it targets specific users with specific information and applications. The result of this is that users spend less time wading though irrelevant information and using different client interfaces to complete their tasks.

A portal allows users to:

- Discover information quickly instead of searching for it
- Have consolidated access to applications
- Be part of a community
- Have access to critical resources
- Have a uniquely personalized interface

These five functions are mapped across the following content areas:

- Personal content
- Workgroup content
- Enterprise content
- Extranet content
- Internet content and tools

The information in each of these content areas can be personalized for each user.

Personal content

Personal content relates to information and applications for a particular, individual user. This could include:

- E-mail
- Calendaring and scheduling of both people and resources
- Workflow processes for the specific user
- Personal addresses (Notes client only)

These applications are already personalized for each user, so we only need a link to these applications in our portal.

Workgroup content

Workgroup content relates to information and applications that are relevant to a user's specific workgroup. This content is usually organized by department or job, such as sales, human resources, finance, marketing, or information systems. Examples of workgroup content are:

- Project team documents, tasks and team spaces
- Sales tracking or relationship management applications
- Workgroup-specific document libraries or discussions
- Product information

As users generally spend most of their time in their workgroup, this content area requires the most thought and planning. Questions to consider are:

- How is your organization split up?
- How can you separate information, resources and applications by workgroup?
- Is your organization structured horizontally (like sales, marketing, human resources) or vertically (like manufacturing, telecommunication, banking and finance)? A workgroup's content is generally not made available to users outside the workgroup because the content is only relevant to the members of the workgroup.

Note For the example portal we built for this redpaper we used the following horizontal workgroups: sales, marketing, and human resources.

Enterprise content

Enterprise content is any information or application that spans the whole organization and is used by most employees. Examples of enterprise content are:

- Human resource information like polices and procedures
- Vacation processing

- Travel requests
- Help desks

This information usually consists of content or applications that already exist in your organization. We can utilize this information by linking it into an area of the portal where everyone has quick access.

Extranet content

Extranet content is interactive communication between a company and selected external businesses outside of an organization over a secure network. This could be:

- Suppliers' order information and applications
- Shared projects with team members outside your company
- Shared business partner applications

This content is not always used by everyone. Usually only one or two workgroups will use an extranet application.

General Internet content and tools

This content generally consists of information or tools available on the Internet, like:

- Customer Web sites
- Stock and weather information
- Subscription news services

This content may be made available to certain workgroups or to everyone.

This redpaper will lead you through the building of a portal composed of a series of different portals, nested and linked in such a way that each user sees only the information relevant to their own self, their workgroup, their organization and the organizations they work with.

Utilizing existing information

Portals capture, organize, structure and filter information that would otherwise be less valuable to a specific user. The content usually exists on current intranet servers or Domino servers.

Existing intranet applications

Most organizations have a lot of corporate information on an intranet that can be utilized by a portal. This information could be Web pages or Web applications.

Examples of intranet information Web pages are product or marketing information, and examples of intranet Web applications are vacation or travel requests.

Existing Domino applications

If you are already a Domino or Notes user, you may have some existing applications to utilize in your portal. These can include applications you access on a personal level, like e-mail, calendar and tasks; on a workgroup level, like sales or project tracking, collaborative document libraries and workgroup discussions; and on an enterprise level, like leave or travel requests, help desk and expense reporting. All these can be utilized, organized, and structured so every portal user has the information and applications they need to do their job efficiently and effectively.

Other out-of-the-box Domino R5 applications you can use in a portal

Lotus Notes R5 provides some sample application templates you can create on your Domino server to give your portal users places to publish content, start discussions, and collaborate in teams. These are:

- Discussion
- Document Library
- TeamRoom

Discussion

A workgroup can use this database to share thoughts and ideas. Almost any group that has information to share among its members can use a discussion database. An engineering group can discuss the products they are designing; an advertising agency can discuss the ad campaigns they are developing; a special interest group can share ideas and opinions on their common interests.

To get started, a user can simply browse through discussion topics and responses that others have contributed. This is particularly useful for new workgroup members who need to gain familiarity with important issues that the group is working on. The history of discussion about these issues is preserved in the group's discussion database.

A user can also take a more active role in the discussion by composing their own responses to others' comments and by proposing new main topics for discussion.

A discussion database is an informal meeting place, where the members of a workgroup can share ideas and comments. Like a physical meeting, each member of the workgroup listens to what others have to say and can voice their own opinions. However, unlike a physical meeting, the participants do not have to be in the same room at the same time to share information. People can participate when it is convenient for them to do so, and because it is easy for them to share information, they are more likely to do so.

For more information on the Discussion database and template, refer to the Best Practices: Templates and Sample Databases (BPTEMP.NSF) documentation database at

`http://www.notes.net`

Document Library

A Document Library application is an electronic filing cabinet that stores reference documents for access by a workgroup. The database might contain anything from environmental impact statements for a group of engineers to financial statements for a group of loan officers.

For more information on the Document Library, refer to the same documentation database referenced previously.

TeamRoom

TeamRoom is a Lotus Domino application designed to support processes that help people work together. Of course software does not create the sense of shared purpose, common language, focus, and drive which make effective teams productive. However, by embedding in its technology a template for many of the basic practices of "good teaming," TeamRoom facilitates the creation and ongoing development of processes and practices common to high performance teams.

TeamRoom is a powerful tool for information sharing and collaboration. However, the work of a TeamRoom-based team is not fundamentally different than it was "before groupware." By creating a shared context for team work, TeamRoom does what many good tools do: it leverages resources, both for the individuals on the team and for the team as a whole. Because the technology is built on a Domino groupware "sharing" platform, this context is richer and the leverage is greater than is typically possible with "sending" tools like e-mail. Domino also makes it possible for TeamRoom to support teams whose members are geographically distributed, and who are sometimes unable to be connected to their computer network.

For more information on TeamRoom, see "TeamRoom" in the "Notes 5 Help" index or refer to the Best Practices: Templates and Sample Databases (BPTEMP.NSF) documentation database at

`http://www.notes.net`

Designing the portal layout

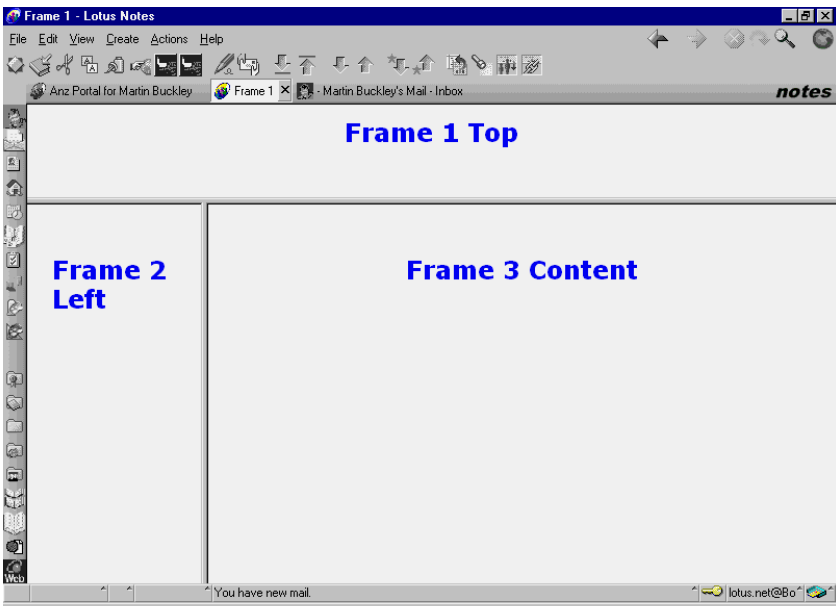
A portal should have an easy to navigate layout to be effective and to encourage users to employ it in completing their daily tasks.

Choosing a layout

Most portals use a three-paned user interface, consisting of the following sections:

1. A top pane that usually has a logo, title and some links to the home page or starting point. This pane usually stays the same no matter which part of the portal the user happens to be in.
2. A left pane usually used for navigation to other parts of the portal or to applications or links to information.
3. A main content pane that is used for displaying information, applications or pages, which takes up most of the screen.

The three-paned user interface is usually set up like this:

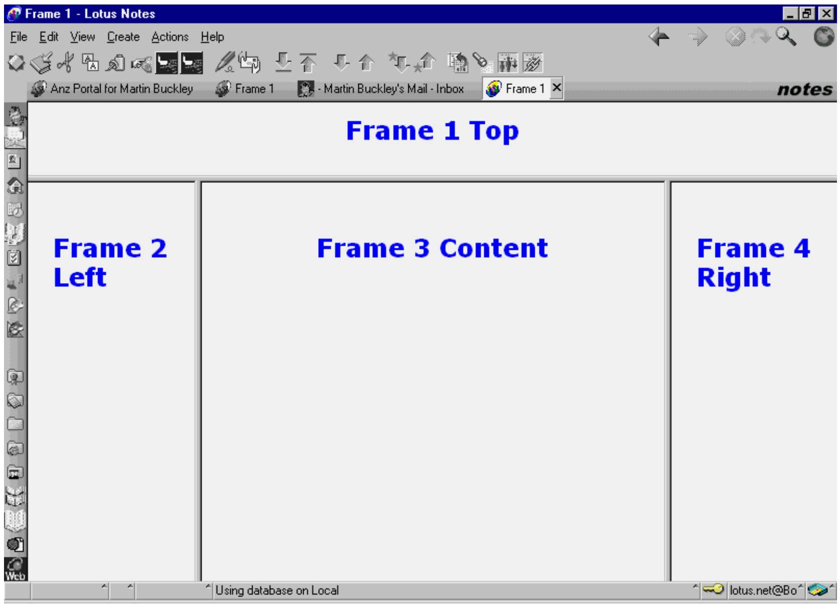


Although you will use the three-paned user interface while building the portal described in this paper, you should be aware that other layouts are possible. Some portals may have a fourth or even a fifth frame. How the frames are placed on the screen can be customized as well. The flexibility of portal layouts is one of the features that makes them so useful in meeting designers' and users' specifications.

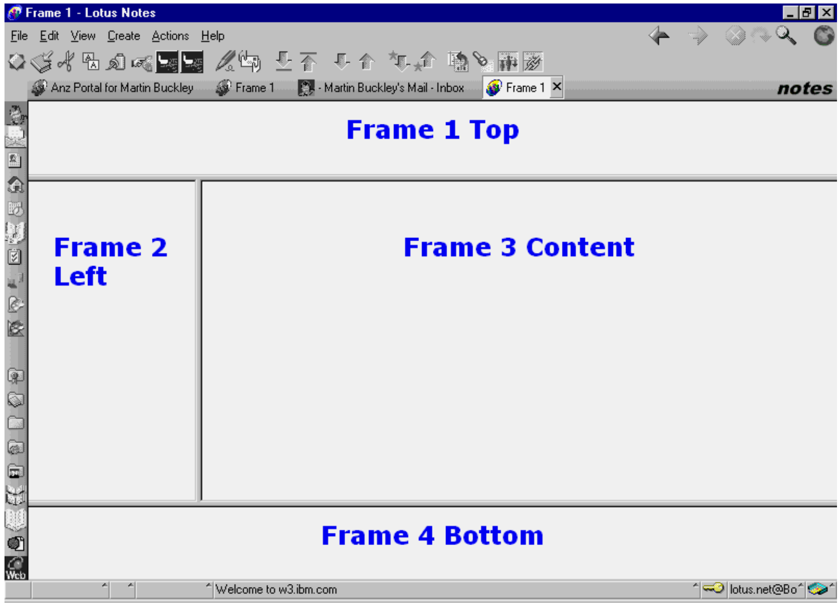
Most portals use a three-paned user interface because users tend to get confused if there is too much information or too many options to choose from. A well-designed portal should personalize the information presented to the user so there is less need to display too many choices to the user at one time.

Examples of four-paned user interfaces

A four-paned user interface with the fourth frame on the right:



A four-paned user interface with the fourth frame on the bottom:



Designing the portal framework

When designing a paned user interface in Lotus Domino Designer for Lotus Notes R5, the set of frames is referred to as a *frameset*. This section describes how to build the frameset for your portal content.

Creating a new database

We first have to create a new Domino database for our portal.

1. Open the Domino Designer client and select File - Database - New from the menu.
2. In the New Database dialog box:
   - Leave the Server field set to "Local" during development. You can replicate this application to a server later.
   - In the Title field type a name for your portal.
   - In the File Name field type a file name for your portal.
   - Leave the Template set to "Blank" and click OK to create your portal.

You now have a new database to start building our portal with.

Creating framesets

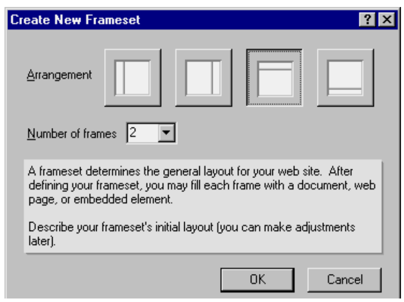
A frameset is a collection of frames that adds structure to your portal. A frame is one section, or pane, of the larger frameset window and can be independently scrollable.

A frame can contain a form, folder, page, document, view, navigator, or another frameset. The frame can also contain an intranet or Internet Web page and be associated with a specific URL. Framesets let you create links and relationships between frames. For example, you can leave one page displayed as users scroll or link to other pages or databases.

The online help document "Designing Framesets" in the *Domino 5 Designer Help* explains in more detail about Framesets.

Create the main frameset for your portal

1. Open Designer and choose Create - Design - Frameset. The Create New Frameset dialog box appears.



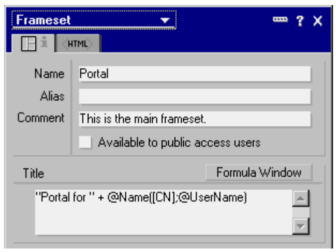
2. At the "Number of frames" drop-down box, select two frames. We are only selecting two frames at this time because we will be using nested framesets. A nested frameset is a frameset inside a frameset. The bottom frame will itself contain a frameset. This will allow us to call different nested framesets into the bottom frame while the top frame remains the same.
3. Next to Arrangement, click the third arrangement for the frames.
4. Click OK. The frameset with the chosen layout appears.
5. Open the Frameset Properties box.

   Note Make sure you are in the Frameset Properties box, not the Frame Properties box.

6. At the Basics tab:
   - Name the frameset “Portal.”
   - Add a comment. The comment appears with the initial list of framesets in the Work pane. Type “This is the main frameset.”
   - Enter a title for the frameset in the Title field or use a formula to compute the frameset title by clicking Formula Window and entering the formula. The frameset title is the name that appears in the Windows tab when the frameset is launched. Use the following code to compute the title with the user’s name. This formula returns the first and last name part of a user’s name for a Notes client and returns your company name for a browser user.

```
   "Portal for " + @If(@ClientType = “Notes”
@Name([CN];@UserName);“<your company name>”)
```

   - The Frameset Properties box should now look like this:



Note You can preview the frameset at any time by using the following steps. As there is currently no content for the frames, the preview will show blank frames. To preview the frameset:

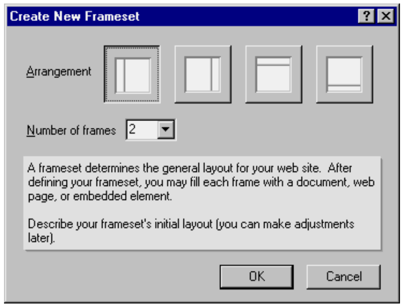
- To preview the frameset on the Web, choose Frame - Preview in Web browser and choose a browser.
- To look at the HTML source, click Synopsis in the Design pane. In the Design Elements tab of the Design Synopsis dialog box, choose framesets and add each frameset for which you want to view the HTML source. Make sure to check “Include JavaScript and HTML” in the Contents tab.
- You can also look at the HTML source by previewing the frameset on the Web and then viewing the source with the chosen Web browser.
- To preview the frameset in Notes, choose Preview in Notes from the Designer toolbar or Frame menu.

7. Press the Esc key to close and save the frameset.

Create a content frameset

Now that you have a main frameset you can create a content frameset to nest inside the main frameset. Create a content frameset the same way you created the main frameset.

1. Open Designer and choose Create - Design - Frameset. The Create New Frameset dialog box appears.
2. At the "Number of frames" drop-down box, select two frames. Next to Arrangement, click the first arrangement for the frames.



3. Click OK. The frameset with the chosen layout appears.
4. Open the Frameset Properties box. Make sure you are in the Frameset Properties box, not the Frame Properties box.
5. At the Basics tab:
   - Name the frameset "Home."
   - Add a comment. The comment appears with the initial list of framesets in the Work pane. Type "This is the home frameset."
6. Select File - Save from the menu, then File - Close.

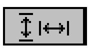
Nesting framesets

Nest the content Home frameset inside the main Portal frameset by these steps:

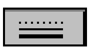
1. Open the Portal frameset.
2. Click anywhere in the lower frame so it has the focus.
3. Open the Frame Properties box.
4. On the Basics tab:
   - Name the frame "Main."
   - In the Type field select "Named Element" and a new field will appear to the right of the Type field.
   - In this new field select "Frameset."

- In the Value field type “Home,” which is the name of the frameset you want to embed in this frame. The Home frameset will be the content for this frame. Alternately, you can click one of the following icons:
  - Formula icon (@) to use a formula that evaluates to a name.
  - Paste icon to paste in a name which you previously copied to the Clipboard.
  - Folder icon to open the Locate Object dialog box and select a design element from a list of elements.

5. Set the style for the main frame:



- On the Size tab specify the following properties for the main frame:
  - Click the radio button for Scrolling to “Off.”
  - Click the radio button for Allow Resizing to “No.”

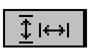


- On the Border tab specify the following properties for the main frame:
  - Uncheck the box Border width.
  - Select zero as the pixel size.

6. Set the style for the top frame:

- Click anywhere in the top frame.

- On the Basics tab, name the frame “Top.”



- On the Size tab specify the following properties for the top frame:
  - Click the radio button for Scrolling to “Off.”
  - Click the radio button for Allow Resizing to “No.”

7. Select File - Save from the menu, then File - Close.

This is the first nested frameset, which is the framework that will be the base and “home” state of the portal.

Creating pages from forms

To hold the content in our frameset we use pages and documents, with views to sort and arrange them. There are two types of pages we use in the portal:

- Read-only pages created by the designer
- User-editable document pages

Read-only pages are part of the Domino application design. They can only be created by the designer and cannot be changed at runtime. Only users with a Domino Designer for Lotus Notes client can change the content. These pages are not appropriate for content that needs to be updated regularly.

User-editable pages are Notes documents, created from a form, that can be created by anyone who has access to create the document.

User editable document pages

User-editable pages are Notes documents that allow users with editor rights to change the content. These pages are generally used for navigation and home pages. Documents are created via a Notes form and then stored in a view. More information on forms can be found in the online *"Domino 5 Designer Help"* database, in the index under "Forms."

Create the home page form

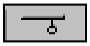
To create the home page form:

1. In the open database, click Forms in the Design pane and click the New Form button.
2. Name the form by selecting Design - Form Properties from the menu and entering the name "Pages" for the form.
3. Deselect the Display option "Include in menu" since we don't want the form to appear on the menu. We will create a link to it later.
4. Create a field by selecting Create - Field from the menu. More information on fields can be found in the online database *"Domino 5 Designer Help"* in the index under "Fields." This first field will generate the unique document ID to allow navigation to this specific document.
5. In the Field Properties box:
   - Assign the name "DocId" to the field.
   - Leave the field type "Text" and set the field beside it as "Computed when composed." This will compute the unique document ID, with the formula below, when a user creates a document.

6. In the Programmers Pane write the following formula:

   ```
   @Text(@DocumentUniqueID)
   ```

   This formula stores the document ID to enable navigation to this specific document.

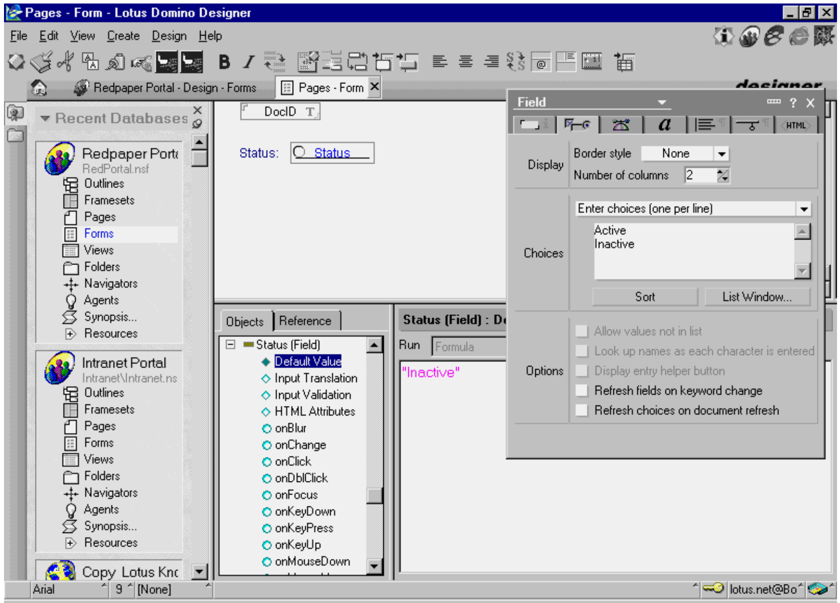


7. On the Hide tab :
   - Select “Hide paragraph from:” and click “Notes R4.6 or later” and “Web browsers” as this field does not need to be seen.
8. The form needs a field for the document status. This will allow us to mark this document as active or inactive. Move down two lines by pressing Enter twice, then type the label “Status: ” and press Tab.
9. Create the field by selecting Create - Field.
10. In the Field Properties box:
    - Assign the name “Status” to the field.
    - Select the field type “Radio button” and leave it “Editable.”

    - On the Control tab:
      - Select Border style as “None.”
      - Select Number of columns as “2.”
      - Leave Choices as “Enter Choices (one per line).”
      - In the text box, on separate lines type:

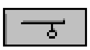
        ```
        Active

        Inactive
        ```

Your form and properties box should now look like this:



11. In the Programmers Pane type the following formula for the default selection:

    "Inactive"



12. On the Hide tab:

    Select "Hide paragraph when document is" and mark:

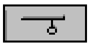
    - Previewed for reading
    - Opened for reading
    - Printed

13. Create a field for the page title by selecting Create - Field.
14. In the Field Properties box:
    - Assign the name "Title" to the field.
    - Select the field type "Dialog list" and leave it "Editable."

15. On the Control tab:
    - Select Border style as "None."
    - Select Number of columns as "2."
    - Leave Choices as "Enter Choices (one per line)."
    - In the text box, on separate lines type:

```
Portal Home

Sales Portal

Marketing Portal

HR Portal
```

Note You may use your own organization’s workgroups here instead of the examples, but they will be referred to in this redpaper as the workgroups defined above.



16. On the Hide tab:

    Select “Hide paragraph when document is” and mark:

    - Previewed for reading
    - Opened for reading
    - Printed

17. In the Programmers Pane type the following formula for the default selection:

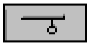
```
"Portal Home"
```

18. Add another field on the next line down with the following attributes:

    - Field name: Display_Date
    - Field Type: Text
    - Field Type: Computed for display
    - The following formula will calculate and display today’s date as shown here:
      Wednesday September 22, 1999
      In the Programmers Pane enter the following formula:

```
D := @Today;

M := @Text(@Month(D));

W:=@Text(@Weekday(D));

WN:=  "1" : "2" : "3" : "4" : "5" : "6" : "7";

N := "1" : "2" : "3" : "4" : "5" : "6" : "7" : "8" : "9" :
"10" : "11" : "12";

Months := "January" : "February" : "March" : "April" :
"May" : "June" : "July" : "August" : "September" :
"October" : "November" : "December";

Days:= "Sunday": "Monday":"Tuesday":
"Wednesday":"Thursday":"Friday":"Saturday";

MonthName := @Replace(M; N; Months);
```

```
Dayname:= @Replace(W;WN;Days);

Dayname+ " " +MonthName + " " + @Text(@Day(D)) + ", " +
@Text(@Year(D))
```

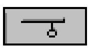



- In the Field Properties box on the typeface tab set the size to “14.”
- On the Hide tab:

  Select “Hide paragraph when document is” and mark:
  - Previewed for editing
  - Opened for editing

19. Add another field on the next line with the following attributes:
    - Field name: Display_Title
    - Field Type: Text
    - Field Type: Computed for display
    - In the Programmers Pane type the field value formula:

      ```
      "Title"
      ```



    - On the Hide tab:

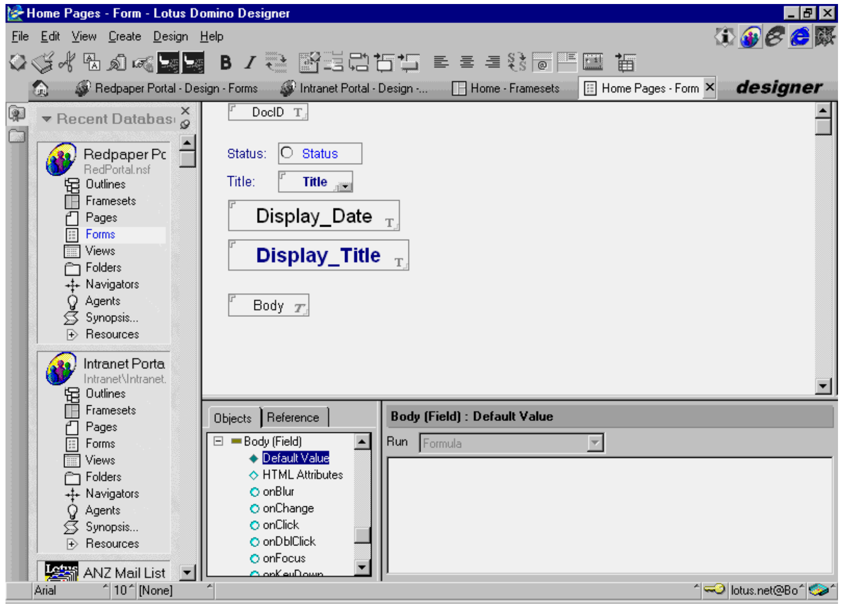
      Select “Hide paragraph when document is” and mark:
      - Previewed for editing
      - Opened for editing

    - In the Field Properties box on the typeface tab set the size to “14” and the text color to blue.

    Note The colors and sizes in this example are only a guide. You can experiment with your own styles.

20. Add another field on the next line with the following attributes:
    - Field name: Body
    - Field Type: Rich text

21. Your form should now look like this:



22. Select File - Save and File - Close to save and close the form.

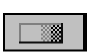
From this form you can create a portal home page, which is the content page users see upon opening, and workgroup home pages, which are what the users see on opening their workgroup home page.

Creating a Navigation Form

The next form is for creating navigation pages. It will reside in the left frame of the portal. This is where users will click links to other parts of the portal, links to applications, and links to intranet pages or Internet pages.

To create the navigation page form:

1. In the open database, click Forms in the Design pane and click the New Form button.
2. Name the form by selecting Design - Form Properties from the menu and entering the name “Navigation | Nav” for the form. The vertical bar and name after the word “Navigation” allows us to give the form an alias to reference in any formulas we create.
3. Deselect the Display option “Include in menu” as we don’t want the form to appear on the menu.
4. You can also give this form a background color or a background image. Do this by clicking the background tab in the Form Properties box and specifying the desired design properties.



5. Click anywhere on the form and type in the title “Navigation” at the top of the form.
6. Create the exact same three fields, DocID, Status and Title, that exist on the top of the “Pages” form. You can copy and paste these into the new form using the following steps:
   - Open the “Pages” form.
   - Highlight the top three fields, including their titles.
   - Select Edit - Copy from the menu.
   - Select File - Close from the menu.
   - Go back to the “Navigation” form and place your cursor on the next line down from the title.
   - Select Edit - Paste. Everything you highlighted will be placed on the page, including all styles.
7. Select the field “Title” and select Design - Field Properties from the menu.

8. Click on the Control tab and change the Choices field to:

   `Portal Navigation`

   `Sales Navigation`

   `Marketing Navigation`

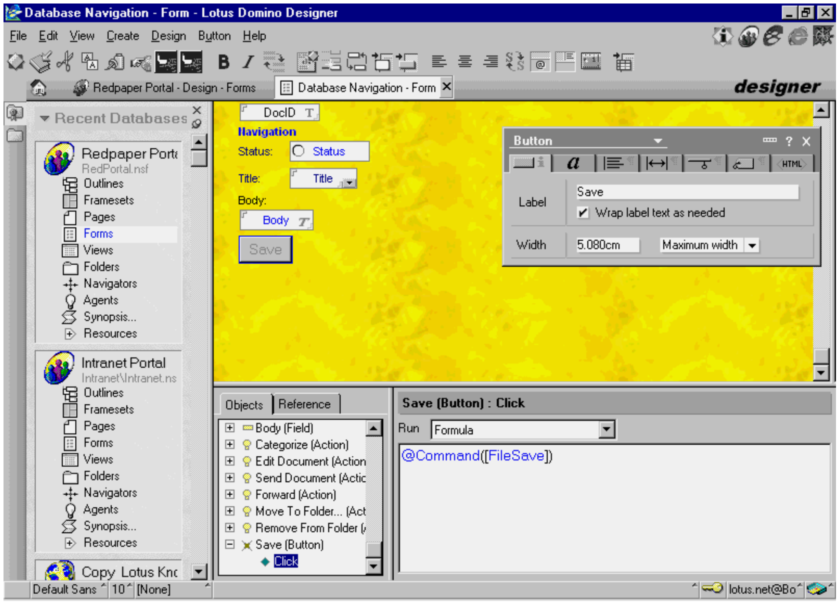
   `HR Navigation`

   `Admin Navigation`

9. Add another field on the next line with the following attributes:
   - Field name: Body
   - Field Type: Rich text
10. On the next line create a button to save the document:
    - Select Create - Hotspot - Button from the menu.
    - In the Label field in the Button Properties box type “Save.”
    - In the Programmers Pane type the following formula:

```
@Command([FileSave])
```

11. Your form should now look like this:



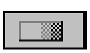
12. Select File - Save and File - Close to save and close the form.

Creating a Search Form

The last form we will create for now is the title and Search form that will reside in the top frame of the portal. This form will be visible the whole time the user is in the portal. We use a form here, instead of a page or document because we require some information entered by the user to search with.

To create the search page form:

1. In the open database, click Forms in the Design pane and click the New Form button.
2. Name the form by selecting Design - Form Properties from the menu and entering the name “Search” for the form.
3. Deselect the Display option “Include in menu” as we don’t want the form to appear on the menu.
4. You can also give this form a background color or a background image. Do this by clicking the background tab in the Form Properties box and specifying the desired design properties. Usually this is designed to match or complement the Navigation page background color or to produce a background image that appears to surround the content page.



5. Click on the form and select Create - Table from the menu.
6. In the table wizard under the Table Size section:

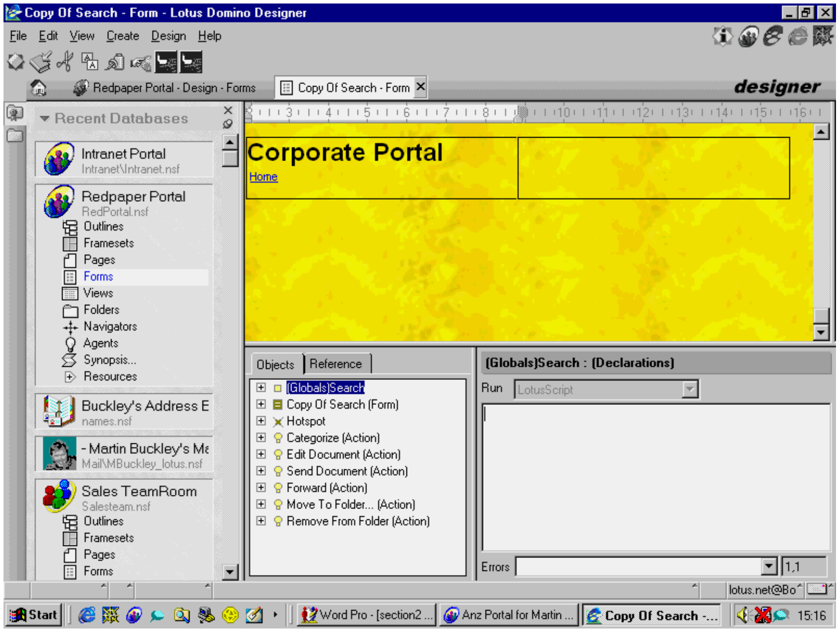
- Set the Number of rows to "1."
- Set the Number of columns to "2."
- Set the table size to "Fits window."
- Click OK.

7. Set the table properties:
    - Highlight both cells of the table and open the Table Properties box by selecting Table - Table Properties from the menu.
    - On the first tab from the left, set the Table Width as "Fit with margins."
    - Select the Cell Borders tab (second tab from left); in the Cell Border Thickness field, click the "Set All To 0" button. This will allow some positioning of objects within the cells but the cell borders will not be visible at runtime.
8. Click in the left cell of the table. This is where you can place your company logo or type in a title for your portal.
9. Create a home link to return the user to the home page of the portal:
    - On the next line, still in the left cell, under the logo or title, type the label "Home" and set the typeface size to "8."
    - Highlight the whole word and select Create - Hotspot - Action Hotspot.

    - At the Info tab of the Action Hotspot Properties box deselect the Display attribute "Show border around hotspot."
    - In the Programmers Pane type the following formula that will take the user to the home portal:

```
@Command([ReloadWindow])
```

Your Search form should now look like this:



10. Save the form by selecting File - Save from the menu.

Creating Views

Now that we have created forms with which to create our document pages, we need some *views* to view, sort and reference them.

Page Views

We need to create two page views to view, sort and reference the various home pages and the Navigator pages that the portal encompasses. These are:

- All Pages
- Active Pages

The All Pages view will show all home pages and Navigator pages. The Active Pages view will only show the currently active page the portal displays. Therefore, you may have two home pages but only one will be active at one time.

Creating the All Pages view

1. Select the portal database in Designer.
2. Click Views in the Design pane.

3. Click the New View button above the Work pane. The Create View dialog box appears.
4. Enter the name “Pages” for the view in the View name field.
5. Leave the View type in the View type field as “Shared.”
6. Leave the “Select a location for the new view” field as is since we want the view to appear at the top level.
7. In the Selection Conditions field, type the following formula:

   ```
   SELECT ((Form = "Nav") | (Form = "Pages"))
   ```

   This will ensure that the only documents displayed in this view are Pages and Navigation pages.
8. Click OK to create the new view.
9. Double-click the Pages view in the Views list to open it.
10. Click the column labeled “#,” choose Edit - Clear, and Yes to confirm.
11. Choose Create - Insert New Column to create the first column.
12. Give the column a title, choose Design - Column Properties and click the Column Info tab. Enter the name “Title” in the Title field.

13. In the sort tab, click the “Ascending” option on the Sort radio buttons.
14. In the Programmers Pane, select the “Field” radio button option on the Display field.
15. Select the field “Title” from the list. This column will show the document titles sorted in alphabetic order.
16. Click anywhere in the view pane to bring the focus back to the view and select Create - Append New Column from the menu.
17. Select Design - Column properties from the menu and give the column a title of “Status.”
18. In the sort tab, click the “Ascending” option on the Sort radio buttons.
19. In the Programmers Pane, select the “Field” radio button option on the Display field.
20. Select the field “Status” from the list.

We have finished creating a very basic view for showing the home pages and Navigator pages. There are many other formatting options you can experiment with. We have only shown you the basics here. For more information on designing views, look in the online database, *Domino 5 Designer Help* and search for “Designing Views.”

Creating the Active Pages view

The Active Pages view is basically the same as the Pages view except that it does not show inactive pages. Because of the similarity of the two views, we will use some of the design from the Pages view. We will change only the selection formula for the view and change the "Status" column to a computed URL column that we can reference in a view lookup formula. This will be discussed later in greater detail.

1. Select the portal database in Designer.
2. Click Views in the Design pane.
3. Click the New View button above the Work pane. The Create View dialog box appears.
4. Enter the name "Active Pages | AP" for the view in the View name field. We have given the view an alias of "AP" to reference it in formulas.
5. Leave the View type in the View type field as "Shared."
6. Leave the "Select a location for the new view" field as is since we want the view to appear at the top level.
7. Click the "Copy style from" button and select "Pages" from the list, then click OK.
8. In the Selection Conditions field, modify the existing formula to read:

   ```
   SELECT (((Form = "Pages")|(Form = "Nav")) & (Status =
   "Active"))
   ```

   This will ensure that the only documents displayed in this view are the active Pages and Navigation pages.
9. Click OK to create the new view.
10. Double-click the All Pages view in the Views list to open it.
11. Click the "Status" column title, select Design Column properties from the menu and change the title from "Status" to "Notes URL."
12. In the programmer's pane, select the "Formula" option for the Column Value radio button.
13. Delete the word "Status" from the formula box. This is where we need to write a formula that computes the Notes URL of a document so we can dynamically open it in one of the frames in portal frameset.
    - Select Design - Preview in Notes and choose Yes when asked if you wish to save the view.
    - Press Ctrl + L on the keyboard to display the URL Address box.
    -  Click twice on the URL Address box dialog arrow This will return the Notes URL of the database and the view.

- Highlight the whole URL and Press Ctrl + C to copy it to the clipboard.
- Return to Designer and click in the formula box in the programmer's pane and select Edit - Paste from the menu. This will paste the Notes URL for the view. Enclose the whole URL in double quotes as shown in the example below:

```
"Notes:///882567EB0082467F/6D89E6D3568E4DF0852567F400639477"
```

- On the next line down add the formula:

```
+"/" + DocId
```

14. Select File - Save and File - Close to save and close the view.

We have now completed the basic framework for our portal. We have created a frameset to hold our pages for our content. The next section discusses content and how to use it on a portal.

Creating and using content in your portal

In this section we discuss the different content types and how to use and personalize the content for your portal.

Content types

As mentioned earlier, portals have five different functions:

- Discovery — A portal is based on the basic desire of users to easily find information and people across an expanding set of sources. This suggests various types of approaches including searching, automatic classification of content, and subscription to information feeds. There must be a means to passively or proactively discover the experts, communities and content in a relevant context. Rather than searching/finding, portals help people "discover".
- Applications — Users then want consolidated access to the applications. Application stovepipes are a thing of the past. Portals should provide aggregated access and display of multiple heterogeneous data stores, including relational database, multidimensional databases, document management systems, email systems, web servers, news feeds, and various file systems/servers (e.g. audio, video, image, and so on). It's useful to see your To-do, next to your email, next to your competitors news feeds all in a single context.

- Community — Community is a critical element of Portal. Portals provide a place where people can establish virtual places or online meeting places for conversations can easily take place. A portal should provide the communities that are bound to form anyway, with a set of structured collaboration tools to foster communication and community development.
- Provisioning — Provisioning of resources, or who get's to see what is critical. Portals must have a membership services layer for users authentication, single-logon and Credential Mapping.
- Personalization — Personalization is about "context." Portals must deliver a uniquely personal UI by establishing customized navigational structures, content, and application interfaces. Components are subscribed to by the user or proactively rendered based on membership or activity tracking.

These are delivered across five levels of content types:

- Personal
- Workgroup
- Enterprise
- Extranet
- Intranet

The next section presents an example of how you can deliver these functions using Notes/Domino R5. It is by no means exhaustive, but gives you some ideas about how you can build on and modify the basic portal.

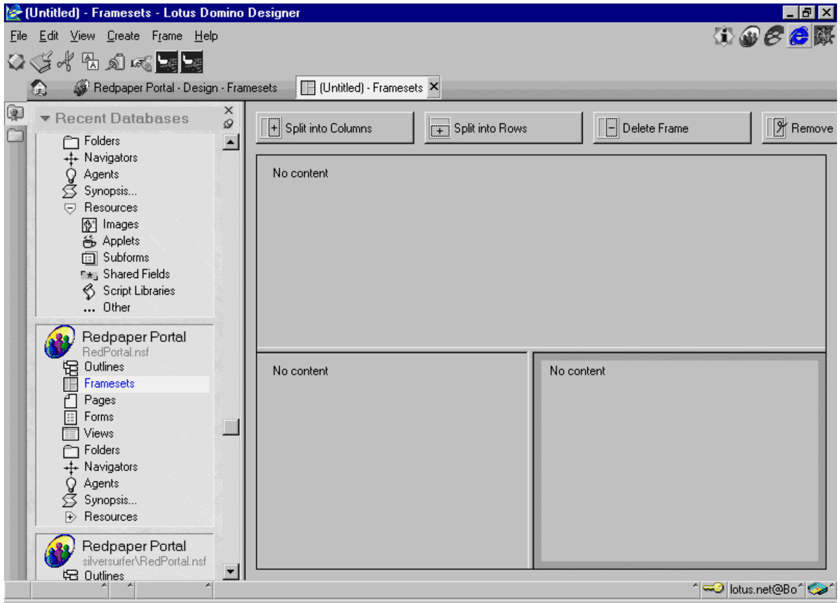
Personal content

Personal content includes such elements as an e-mail inbox and, if you are using a Notes client, a calendar with group scheduling capabilities and personal addresses. The portal to handle e-mail and calendaring must be configured differently for a Web browser than for a Notes client. Notes clients are a lot easier to configure for personal content than are browsers.

Creating personal content in the portal for Notes users

In this example we will create a frameset that includes the user's inbox, calendar and to do list.

1. Open Domino Designer and create a new frameset in the portal database by selecting Create - Design - Frameset from the menu.
2. At the "Number of frames" drop-down box, select three frames. Next to Arrangement, click the second arrangement from the left.
3. Resize the frames so the top frame takes half the screen and the bottom two frames are equal, like this:



4. Click in the top frame to give it the focus and open the Frame Properties box by selecting Frame - Frame Properties box from the menu.
5. In the Name field type the title “E-mail.”
6. We now have to choose some content for the frame.
   a. At the Type field choose “Named Element” from the drop-down list and choose “Folder” in the drop-down list field to the right.

   b. Click the folder icon and the Locate Object dialog box opens.
   c. Click the drop-down list arrow in the field Kind of object and select “Folder.”
   d. Click the drop-down list arrow in the Database field and select “-Users mail file-.”
   e. Click the drop-down list arrow in the Frameset field and select “($Inbox)” and click OK to close. Your inbox will now show in the frame.

   Note In the Frame properties box for the “E-mail” frame there is a check box for “Simple appearance.” You can experiment with this turned on and off. Preview it in the Notes client by selecting Frame - Preview in Notes and you will see the different ways you can view the inbox, calendars and to do lists.
7. Click in the bottom left frame. This is where we will place the user’s calendar.

a. Open the Frame Properties box by selecting Frame - Frame Properties box from the menu. In the Name field type the title “Calendar.”

b. At the Type field choose “Named Element” from the drop-down list and choose “View” in the drop-down list field to the right.

c. Click the folder icon and the Locate Object dialog box opens.

d. Click the drop-down list arrow in the field Kind of object and select “View.”

e. Click the drop-down list arrow in the Database field and select “-Users mail file-.”

f. Click the drop-down list arrow in the Frameset field and select “(Calendar)” and click OK to close. Your calendar will now show in the frame.

8. Click in the bottom Right frame. This is where we will place the user’s to do list.

a. Open the Frame Properties box by selecting Frame - Frame Properties box from the menu. In the Name field type the title “To do.”

b. At the Type field choose “Named Element” from the drop-down list and choose “View” in the drop-down list field to the right.

c. Click the folder icon and the Locate Object dialog box opens.

d. Click the drop-down list arrow in the field Kind of object and select “View.”

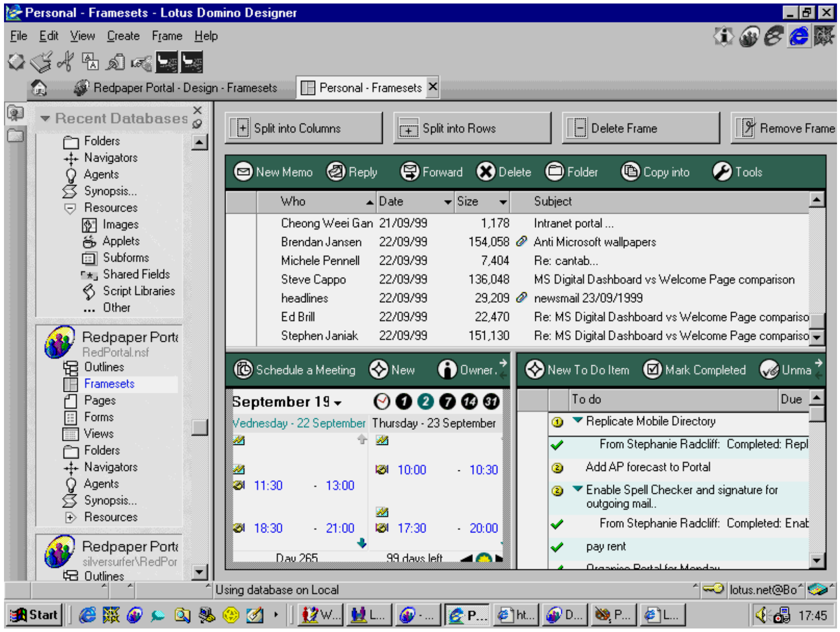
e. Click the drop-down list arrow in the Database field and select “-Users mail file-.”

f. Click the drop-down list arrow in the Frameset field and select “($Todo)” and click OK to close. Your calendar will now show in the frame.

9. Open the Frameset Properties box by selecting Frame - Frameset Properties from the menu and name the frameset “Personal.”

10. Save the frameset by selecting File - Save from the menu.

Your frameset should now look like this:



11. This page will give portal users a snapshot of their inbox, calendar and to do list at one time.

This frameset can only be used by Notes users because their userID and Notes location documents point the frames to the user's e-mail server to display the frames. Web browsers have no local storage of user information, therefore requiring a user to log in and run some agents on the server to locate their e-mail database. In the next section we will show you one way to allow Web browser users to see their e-mail and calendar in the portal. There are probably many ways to do this, but this paper presents only one of them.

Personal content page for Web browser users

Access to the portal by Notes client users and Web users need to be considered separately.

About authentication and portals

Web browsers have no concept of location documents or user IDs, so we have to run an agent to collect the user's information from the server's Domino Directory and return the user's mail file location. The user must be authenticated on the server to determine his name. Therefore, your design must take into account how the user will log in. You may choose to secure the whole portal application so the user must authenticate to use any part of the portal. After the user is authenticated you can then personalize the information according to group names in the Domino Directory or user roles

to which the user belongs. For example, if the user authenticates to use the portal, and is in the sales group or role, they may only see information, applications and tools that relate to the sales workgroup.

Currently, Domino authentication does not traverse multiple servers, so some thought has to be given to where the portal application resides. For example, if the user is authenticated in the root data directory of the portal server, which also contains the user's e-mail database, then the user will not be re-prompted for a user name and password. There are many different authentication options and scenarios, including single log-on options and session-based authentication. Information agents and authentication can be found in the online database, *Domino 5 Administration Help.*

Creating an inbox and calendar link for Web browser users

We will create a link to the user's inbox and calendar on the search form that users see on the main header at the top of the portal. We use that form because we need to collect some information about the user and run an agent that uses that information when the user clicks the inbox or calendar link.

1. In Designer, open the portal database and click the Forms design element.
2. Open the search form and move the cursor to the line outside and directly beneath the table.
3. Select Create - Field from the menu and type "fullname" in the Name field in the info tab (the first tab from the left), in the Field Properties box.
4. Select "Computed when composed" from the Type drop-down list. In the Programmers Pane, in the Value formula box, type the formula:

   ```
   @UserName
   ```

   This will return the full canonical name to the field so we will know who the user is.
5. Position the cursor beside the "fullname" field and select Create - Field from the menu.
6. Type "mailurl" into the Name field in the info tab (the first tab from the left), in the Field Properties box. Select "Editable" from the Type drop-down list. This field will be set when the user clicks the links to open the inbox or calendar.
7. On the left side of the Programmer's Pane, click the Objects tab and select the "Search (Form)" object.
8. The fifth attribute of the "Search (Form)" object is the "WebQuerySave" event. Modify the formula in the formula box to:

   ```
   @Command([ToolsRunMacro]; "mail")
   ```

This calls the “mail” agent when the form is saved. The form will be saved when one clicks on the link to open the inbox or calendar. We first have to create a script library that finds the Domino Directory to use.

To create the script library “dbnab”:

- Select the Create - Design - Script Library from the menu.
- In the Option event type the Lotuscript:

```
Option Public

Option Declare
```

- In the Declarations event type the LotusScript:

```
Const dbnab$ = "names.nsf"
```

  This will set the constant “dbnab$” to the Domino Directory “names.nsf.”

- Select File - Save and type in the script library name as “dbnab” and click OK.
- Select File - Close to return to the search form.
- To create the agent “mail”:
- Select Create - Design - Agent from the menu.
- Enter the name “mail” in the Name field since this is the name we are calling when we save the search form by clicking on the inbox or calendar link.
- Select “Run once (Commands may be used)” in the “Which document(s) should it act on?” drop-down list.
- In the Programmer’s Pane select “Lotuscript” from the drop-down list.
- In the “Options” event modify the Lotuscript to:

```
Options Public

Use "dbnab"
```

This will call the script library called “dbnab,” which we created.

- In the “Initialize” event add the Lotuscript:

```
Sub Initialize

'Declare Objects

Dim sess As NewNotesSession

Dim dB As NotesDatabase

Set dB = sess.currentdatabase
```

```
Dim nab As Notesdatabase
Set nab = New NotesDatabase ("",dbnab$)
Set doc = sess.DocumentContext

Dim dbpth As String
dbpth=db.filepath

'Use the hierarchical name to avoid conflicts
nameurl$ = Lcase$(doc.fullname(0))

'Search for the person document in the Directory
Dim coll As NotesDocumentCollection
Dim search As String
search$ = "Form = ""Person"" & _
      @LowerCase(FullName) = """ + nameurl$ + """"
Set coll = nab.Search(search$, Nothing, 0)

' If there are conflicts
If coll.count > 1 Then  'fix multiple hierarchical names
      Print "<b>ERROR</b>The user has one or more"
      Print "conflicting names. <p>"
      Print "<b>CONTACT THE WEBMASTER</b>"
      Print "<p><a href=""OpenMail?OpenForm"">Go back</a>"
      Exit Sub
End If
'End Conflicts



Set  persdoc = coll.GetFirstDocument
'If the person doc exists get the values of
'mail db and home server
```

```
If Not (persdoc Is Nothing) Then
      If Instr(persdoc.mailFile(0),".nsf") Then
            mail$=Trim(persdoc.mailFile(0))
      Else
            mail$=Trim(persdoc.mailFile(0))+".nsf"
      End If

      server$=persdoc.mailServer(0)
'This Condition should never happen since the
      'users have already logged in

Else        Print "ERROR, user not found."
      Print "<p><a href=""OpenMail?OpenForm"">Go back</a>"
      Exit Sub
End If

'Knowing the server name, get IP address
' and open the mail file
Dim colserv As NotesDocumentCollection
Dim searchserv As String
searchserv$ = "Form = ""Server"" & _
      ServerName = """ + server$ + """"
Set colserv = nab.Search(searchserv$, Nothing, 0)

mailurl$=doc.mailurl(0)
Set  servdoc = colserv.GetFirstDocument
If Not (servdoc Is Nothing) Then
      'IMPORTANT, for URL we use this field
      'in the server doc
      address$=servdoc.NetAddr_0(0)
      Print "[http://"+address$+"/"+mail$+mailurl$"]"
```

```
        Else
              Print "<b>ERROR</b>, server not found."
              Print "<p><a href=""/" & dbpth & """>Go back</a>"
              Exit Sub
        End If
End Sub
```

This agent assumes the user is authenticated, searches the directory for the location of the user's e-mail file, then builds a URL for the link to use.

9. Select File - Save and File - Close from the menu to save and close the agent and return to the search form.
10. In the left cell of the table, on the next line under the "Home" link, type the text "Open Inbox."
11. Highlight the text and select Create - Hotspot - Action Hotspot from the menu.
12. In the Frame field of the Action Hotspot properties box Hotspot Info tab, type the Frame name "Right." This will then target the inbox to the right-hand content frame of the portal.
13. In the Programmer's Pane, select "Formula" from the drop-down list and type the following formula:

```
FIELD mailurl := "/($Inbox)?OpenView";
@Command([FileSave]);@Command([FileCloseWindow])
```

This sets the field "mailurl" to be the URL that will open the user's inbox when the WebQuerySave agent runs.

14. For the calendar link, type the text "Open Calendar" next to the link "Open Inbox."
15. Highlight the text and select Create - Hotspot - Action Hotspot from the menu.
16. In the Frame field of the Action Hotspot properties box Hotspot Info tab, type the Frame name "Right." This will also target the inbox to the right-hand content frame of the portal.
17. In the Programmer's Pane, select "Formula" from the drop-down list and type the following formula:

    ```
    FIELD mailurl := "/Calendar?OpenView";
    @Command([FileSave]);@Command([FileCloseWindow])
    ```

18. Select File - Save and File - Close to save and close the form.

Important In order for a user to connect to his inbox and calendar, the following criteria must be met:

- The user is authenticated on the Domino server on which the portal resides.
- The user has access to their e-mail database from that server.
- The user is using a current, 4.x or higher type browser.

Workgroup content

This content relates to the workgroup to which the user belongs within the organization. The information your portal will deliver to the user needs to be tailored to the specific workgroup. For instance, a user who is in the sales workgroup wants information at hand that is relevant to the sales workgroup. For this portal we have used the horizontal workgroups sales, marketing and human resources as examples. We will personalize the information for these groups.

Example sales workgroup content

A sales workgroup would generally require such applications as Customer Relationship Management, Document Library, and a TeamRoom for team documents and projects. These applications may already be available on an intranet or other third party proprietary application platform, or they may be current Domino applications on your Domino server. For this exercise, we will create and utilize the standard Domino templates Document Library and TeamRoom.

The Sales team may also require product and marketing information, access to client Web sites, current stock prices and news feeds. This additional content may exist on the intranet, Internet or Domino applications. For this example we will link to a few Internet Web sites and discuss how you can create a Mail-In database to subscribe to external news feeds and display the news feeds in the portal.

There are some free, sample application templates at:

`http://www.notes.net`

in the Iris Sandbox, and there are shareware and Lotus Business Partner applications available for download, trial and purchase at:

`http://www.lotus411.com.`

Creating example content applications

For our example sales workgroup, we will need a document library and a TeamRoom application. We can create them from the templates that are shipped with Notes and Domino R5.

To create a new document library from a template:

1. Select File - Database - New from the menu.
2. In the New Database properties box choose a server on which to create the application, or leave on "Local" if you want the document library to reside on the computer on which you are working.
3. Type in a title, for example "Sales Document Library" and a file name such as "Doclib.nsf." We will be referring to this example title and file name when using them in our portal.

   Note It is good practice to keep the file name short, to make it easy to reference in a URL when linking to the document library from a Web browser.
4. Select the Doc Library - Notes & Web (R5.0) template from the drop-down template list.
5. Click OK to create the document library.

   More information can be found in the *Using This Database* document in the document library, or refer to the documentation database *Best Practices: Templates and Sample Databases (BPTEMP.NSF)* at:

   `http://www.notes.net`

To create a new TeamRoom from a template:

1. Select File - Database - New from the menu.
2. In the New Database properties box choose a server on which to create the application, or leave on "Local" if you want the TeamRoom to reside on the computer on which you are working.
3. Type in a title like "Sales TeamRoom" and a file name like "salesteam.nsf." We will be referring to this example title and file name when using them in our portal.
4. Select the TeamRoom template from the drop-down template list.
5. Click OK to create the TeamRoom.

More information can be found by pressing F1 while in any form in TeamRoom. This will open extensive documentation found in HELP5_CLIENT.NSF. The *Using Database* document for this database also contains help information. For additional information, refer to the documentation database Best Practices: Templates and Sample Databases (BPTEMP.NSF) At:

`http://www.notes.net`

We will create links to use these two sample databases in our example Sales Portal.

Creating a sales frameset

We will create a frameset to nest inside the portal's main frameset to display the sales workgroup's content. This process is the same for all workgroups in your organization.

To create a sales frameset:

1. Open designer and select Create - Design - Frameset from the menu to create a new frameset in the portal database.
2. At the "Number of frames" drop-down box, select two frames. Next to Arrangement, click the arrangement on the left for the frames and click OK. The left frame will contain the Sales Navigator Page and the right frame, or content frame, will contain the Sales Home content page.
3. Select Frame - Frame Properties from the menu and click the Frame Info tab, the first from the left.
4. Click in the left frame and type the title, "Left."
5. Click in the right frame and type the title, "Right."
6. Select Frame - Frameset Properties from the menu and type the title, "Sales Portal" for the frameset.
7. Select File - Save and File - Close to save and close the frameset.

Create framesets for all workgroups in your organization. For this example portal we created another frameset for Marketing and one for Human Resources.

Creating a sales navigation page

This section describes how to create the navigation page that the sales workgroup users will use to navigate to information, applications, and tools for their daily tasks. This process will be the same for all workgroups.

1. In Designer, select the portal database and select Create - Database Navigation from the menu to create a sales navigation page for the left frame of the Sales Portal.
2. In the Status Field, click the "Active" radio button option.
3. Select "Sales Navigation" in the Title field.
4. The Body field is where we create links for the sales workgroup users; this determines what they see when in the sales portal. Type the title, "Sales Portal" in a large, bold typeface of around 18 points. You can also choose to import or paste a graphic, such as a division or team logo.
5. Highlight the title or graphic and select Create - Hotspot - Link Hotspot from the menu.
6. In the first tab of the Hotspot Resource Link properties box, select "Named Element" from the Type drop-down list and choose "Frameset" in the field to the right.

7. In the Value field type “Sales Portal” and in the Frame field, type “Main.” When the user clicks on the link “Sales Portal,” the frameset “Sales Portal” will open in the frame named “Main.” Since the “Main” frame is the bottom frame of the “Portal” frameset, the “Sales Portal” frameset will be nested inside the “Portal” frameset.
8. Press Enter twice to move down two lines and change the typeface to something plain and small, about eight or nine points.

Now we will create links to all the Domino applications that we want the sales workgroup users to access in their portal. For our example we will create links to the document library and TeamRoom we created in a previous step. To do this:

1. Open the document library by selecting File - Database - Open from the menu, then type in or select the server you created the document library on.
2. Select the document library from the list or type in the File Name and click Open.
3. Select Edit - Copy As Link - Database Link to copy a link to this database to the clipboard, then select File - Close from the menu.
4. Move the cursor to the last line of the Body field and type the label “Document Library.” Highlight both words and select Create - Hotspot - Link Hotspot from the menu.

5. Click the first tab in the Hotspot Resource Link properties box, select “Link” from the Type drop-down list, and click the paste icon to paste the database link into the hotspot.
6. If you want the linked Domino application to remain in the same portal context, you can type the frame title “Right” in the Frame field. In this example it will load the document library application into the content frame on the right side of the portal. Otherwise, type “New Window” in the Frame field, which will load the Document Library, or any other application you link to, into a new window in your Notes client or Web browser.

7. You may choose to load only a single view from another Domino application into the content frame. For example, to load the "All Documents" view from the Document Library you just created:

   a. In the first tab of the Hotspot Resource Link properties box for the Document Library hotspot, select "Named Element" from the Type drop-down list and choose "View" in the field to the right.

   b. Click the folder icon in the Database drop-down list in the Locate Object properties box, select the Document Library you just created, or any other Domino database from which you wish to pull a view.

   c. Select the "All Documents" view from the "View" drop-down list and click OK to complete the link.

8. Create a link for the TeamRoom you have just created and any other Domino applications you think the sales workgroup may need to perform their daily tasks.

9. To create a URL link to an intranet or Internet site, type a label on the last line of the Body field for the URL link you want to create. For this example we will use a News & Views link on the Lotus Web page:

   a. Type the label "Lotus News & Views."

   b. Highlight the text and select Create - Hotspot - Link Hotspot from the menu.

   c. In the Hotspot Resource Link properties box, select "URL" in the Type field and type the following URL into the value field:

   ```
   http://www.lotus.com/home.nsf/rightframe/1newsviews
   ```

   d. Enter a value of "Right" in the Frame field to pull this Web site into the content frame.

   e. Select File - Save from the menu, then select Edit - Copy As Link - Document Link from the menu.

   f. Select File - Close from the menu to close the Sales Navigation document.

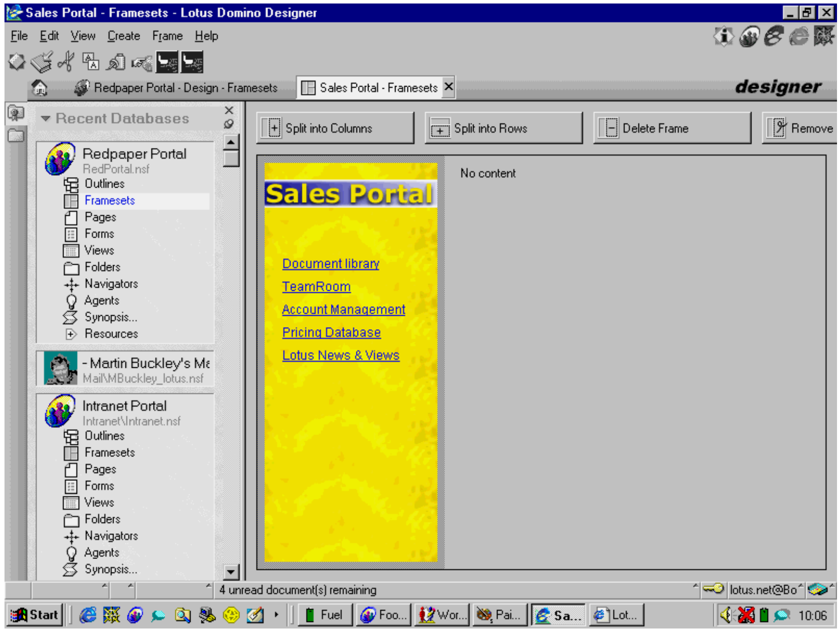
10. Open Designer, select the portal database, and open the Sales Portal frameset.

11. Click in the left frame and select Edit - Paste from the menu. This pastes the Sales Navigation Document into the left pane of the Sales Portal.

12. Select Frame - Frame Properties if you wish to adjust the frame borders, frame size, and scroll bars.

13. Select File - Save to save the frameset.

Your Sales Portal frameset should look something like this:



Among the types of links you can place in the Navigation page are:

- Domino application, view, and document links
- URLs to intranet or Internet sites
- Framesets, folders, views, and pages from other Domino Applications
- Action Hotspots that can run Notes formulas, LotusScript or JavaScript to do many simple or complex tasks

To find out more about hotspots, refer to the online database, *Domino 5 Designer Help.*

Now that you have completed the Sales Navigation page, you can create navigation pages for Marketing, Human Resources or any other workgroups in your own organization and paste them into the left frames of the respective framesets.

Creating a sales home page

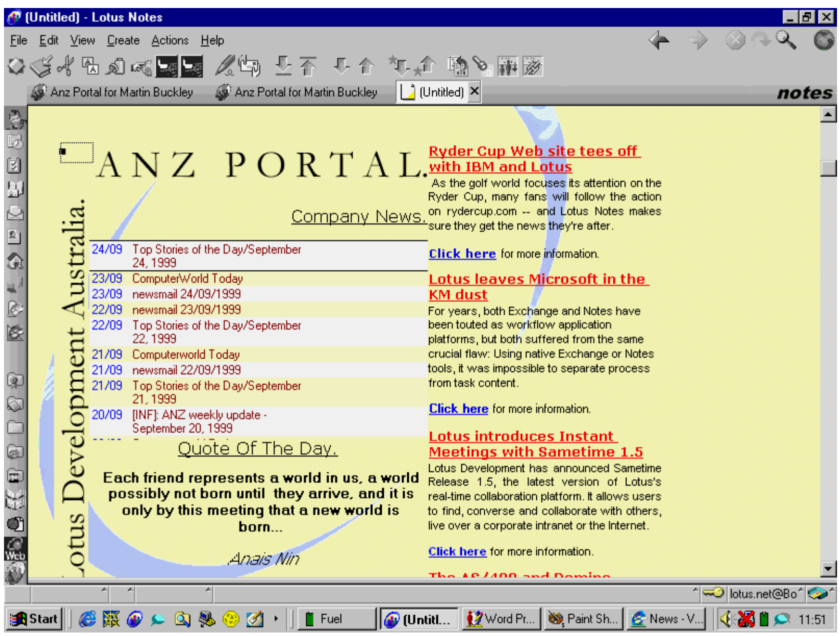
In this section we will create the sales home page that the sales workgroup users will see when they open the sales portal. This can include such information as external news feeds, sales news items, general internal sales information and propaganda, sales target charts, and anything sales people need for their day to day activities. A content editor or guide should be assigned in your organization to keep this information up to date. Portal

users will want to use the portal as their main tool as long as if the information is current, relevant, interesting, and useful. Features that change on a daily basis, even something as simple as a quote of the day, will also help to keep the users coming back regularly.

The home page is where most dynamic, current content is displayed. The design of your home page can be as simple or as fancy as you wish. For instance, you can design the page to look like a daily newsletter or newspaper, with headlines for the top stories or information you want displayed.

You may want to embed a view that collects news via a mail-in database. This would give your portal an e-mail address. Your Domino server would need to be configured to receive Internet e-mail to capture information and news from Internet subscriber sources. It can also receive e-mail from users within your organization. For example, if your portal has an e-mail address of portal_news@lotus.com, you can subscribe to external news sources with this e-mail address and the portal will receive the subscription. This will eliminate the need for individual users to subscribe. As another example, someone in Marketing could send an e-mail to the portal database, via normal e-mail, to advise of a new product launch or product information.

Here is an example Sales Portal home page with an embedded news view:



To set up your portal to receive news subscriptions:

1. Set your portal to be a mail-in database by creating the relevant documents in the Domino Directory, which will give your portal an e-mail address. This process is described in the online database, *Domino 5 Administrators Help.*

2. The portal will need a form in which to display the document news items. The fields you want to display in this document must match those found in the e-mail Memo form of a normal Notes Mail database.

   a. Open Designer, select the portal database and select Create - Design - Form from the menu.

   b. Select Design - Form Properties and type the title, "News | Memo."

   Important The form and fields must be named exactly the same as they are here. Otherwise they may not display the information correctly from the e-mail source.

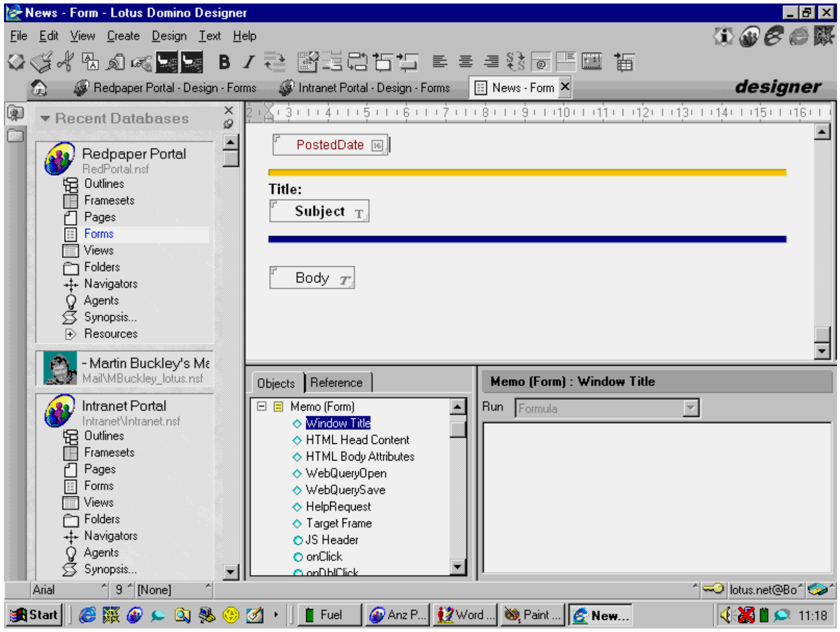
   c. Select Create - Field from the menu and in the Field properties box type the title, "PostedDate." This matches an e-mail memo field of Posted Date. Change the Type to "Date/Time." Press Enter twice to move two lines down.

   d. Select Create - Field from the menu and in the Field properties box type the title, "Subject." Press Enter to move down one line.

   e. Select Create - Field from the menu and in the Field properties box type the title, "Body" and change the Type to "Rich Text." This will contain the content. You can add Horizontal lines, change the attributes of the fields, and add labels if you want to make it look distinctive.

   f. Select File - Save and File - Close to save and close the form.

The form should now look something like this:



3. We now need a view in which to hold these documents, and which we will embed into our portal home pages.

   a. Select Create - Design View from the menu.

   b. Type the view name, "News."

   c. In the Selection conditions field, type the formula:

   ```
   SELECT ((Form = "News") | (Form = "Memo"))
   ```

   d. Click Customize to create and open the view for design.

   e. Click in the column "#" to select the column.

   f. In the Programmer's Pane, choose the "Field" option in the Column Value Display radio button.

   g. Choose "PostedDate" in the list of fields.

   h. Select Design - Column Properties from the menu, press Delete to delete the current title and type "Date" in the Title field.

   i. Click the Sort tab, second from the left, and choose the "Descending" option so the latest news item will always appear on top.

   j. Change other attributes of the column, like typeface color and size, to give it the desired graphical appeal.

k. Select Create - Append New Column. In the Programmer's Pane, choose the "Field" option in the Column Value Display radio button.
l. Choose "Subject" in the list of fields.
m. Select Design - Column Properties from the menu, press the delete key to delete the current title and type "Date" in the Title field.
n. Select Design - View Properties and on the Style tab, third from the left, select the check box "Extend column to window width", change "Lines per row" to "2" and check the "Shrink rows to content" check box.
o. Select File - Save and File - Close to save and close the view.
p. You may wish to create a few dummy news items, to display when you embed this view into a home page, by selecting Create - News from the menu.

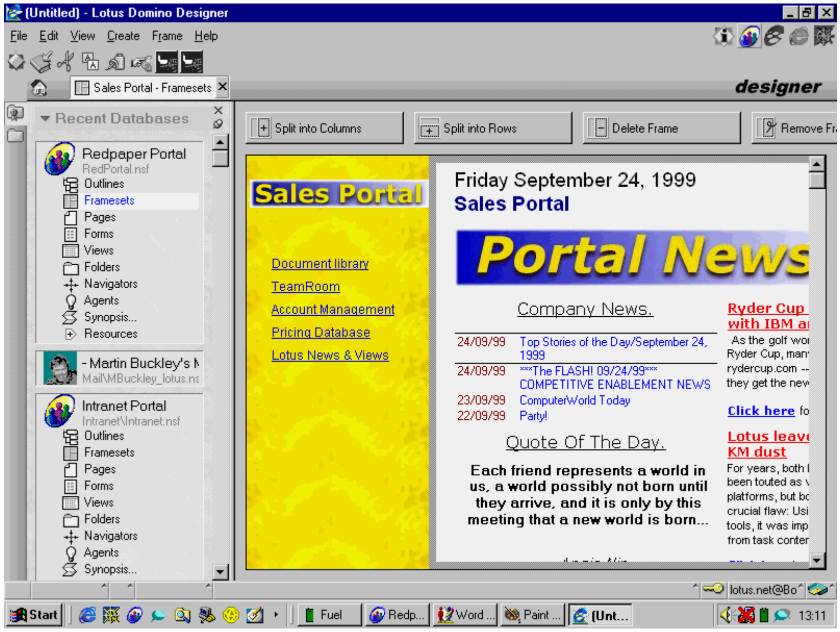
Now that we have our news view we can create the actual home content page into which to embed the view and add other content.

To create a sales home page:

1. In Designer, select the portal database, then select Create - Pages from the menu to create a sales page for the right frame of the sales portal.
2. Select the radio button option in the Status Field as "Active."
3. Select "Sales Portal" in the Title field.
4. Type your information into the Body field. Since this is a Notes document, writers can create and edit the document in place.
5. Move the cursor to the point on the page where you want the view to appear, and select Create - Embedded Element - View from the menu. Choose the view "News" from the list and click OK to embed it into the page.
6. In the Embedded View properties box on the Info tab, first from the left, type "NewWindow" in the Frame field if you want the news item to appear in a new window when the user opens the document.
7. On the Display tab, second from the left, change the size to the desired height and check the Display option "Show contents only (don't show title)."
8. Select File - Save and Edit - Copy As Link - Document Link from the menu.
9. In Designer, select the portal database and open the Sales Portal frameset.
10. Click in the right frame to give it the focus and select Edit - Paste from the menu to paste in the Sales Home page. This frameset will now nest

inside the main Portal frameset. You can follow these procedures to create home pages for all your workgroups.

Your Sales Portal frameset should now look something like this:



Enterprise content

Enterprise content is usually information that all or most employees in the organization need to access. Some examples of this type of information are as follows:

- Human resources information, such as policies and procedures, forms bins, and other employee information. This material might already exist on an intranet or in a Domino application. If it does not, but would be useful in your organization, tools like the Document Library template or templates customized for your company can be useful in organizing this type of content.
- Applications like vacation requests, help desk ticket tracking, or information system requests may exist on your intranet or Domino server. If not, this type of application can be built very easily in Domino. To get you started, evaluation and shareware Domino applications are available for download at:

  `http://www.lotus411.com.`

- You may want to show general company information and news in the portal home page.

Outlines

We will use the Domino design element, Outlines, to show enterprise information on all navigation panes. Outlines, like image maps and navigators, are tools that let you provide navigation in your application. All databases come with a default navigation structure called the folder pane (also referred to as the navigation pane). The folder pane, by default, displays a list of shared views and shared folders. In the Notes client, the folder pane appears in the left pane; in a Web browser, it displays at the top left of the browser window. When users click on the view or folder they want to access, that view or folder is displayed in the right pane.

If you want to create a custom navigation structure for your application, create an outline. In addition to jumps to all of the views and folders in your database, you can include actions or links to other elements. You can create an outline that navigates through your entire application or site, or through part of it.

Once you create an outline, you embed it on a page or form. This displays it to users, who use it as a site map or navigational structure. Users can click on the outline entries to take them where you want them to go. This could include the links to your enterprise applications or information.

Creating an outline

To create an outline for enterprise content:

1. Click Outlines in the Design pane.
2. Click the New Outline button.
3. Click the New Entry button.
4. In the Outline Entry Properties box, type the label you want to appear in the outline, for example, Home Page or Main View.
5. Enter a type for the element in the Content field. If you are creating a jump to a named element that does not yet exist, Designer will display a prompt letting you know that you will need to create the element later.
6. Jump to:
   - A URL (enter the entire URL, including protocol; for example, http://www.lotus.com).
   - A link - such as to an anchor, document, view, or database link.
   - A named element - such as a Page, Form, or View.
   - Perform an action - such as open or create a document. To enter an action, click the @ button, and enter a formula using the formula language.

- None (use this to create a top-level category for nesting entries).

7. Enter the target frame for the jump or action. Usually the target frame is the content frame "Right" or you could enter "New Window" if you want it to appear in a new window.
8. Select Design - Outline Properties from the menu and enter a title of "Enterprise Content."

More information on Outlines can be found in the online database, *Domino 5 Administrators Help.*

Embedding the outline in the navigator form

Once it is created, you embed the Enterprise Content outline into the Database Navigation form. This will add the outline to every navigation page you have created or will create in the future. Then you can add and delete any enterprise content links or jumps from the outline in one place and it will change the embedded outline entries across all navigation pages automatically.

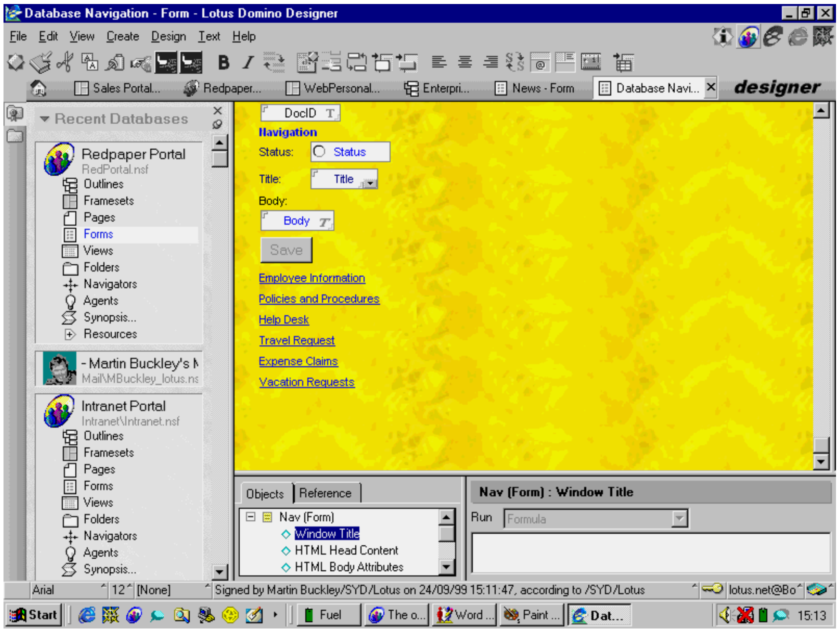
To embed the outline entry in the Database Navigation form:

1. In Designer, select the portal database.
2. Open the form, Database Navigation.
3. Position the cursor directly underneath the field Body.
4. Select Create - Embedded Element - Outline.
5. Select the outline "Enterprise Content" from the dialog box and click OK.
6. Select Element - Outline Properties from the menu and click the left tab, Info.

   Note This menu item will only appear when you have the outline element selected.
7. To make the navigation page look consistent, the embedded outline should have the same graphical and type attributes as the text label hotspots already created in the document:
   - In the Type field, uncheck the "Show twisties" check box.
   - In the Outline size section, select a width of "Fixed Width" and "4cm" or "1.6in"; choose "Fit to content" for the Height.
   - On the Font tab, second from the left, set the typeface attributes to be the same as the navigator pages you created previously.
   - On the Background tab, third from the left, set the background to the same color or background image as the form so it looks the same in a Web browser as it does in a Notes client.

- On the Layout tab, fourth from the left, set all offsets to “0” and make adjustments so the outline entries are the same as the navigation document.

Your embedded outline should now look something like this:



Extranet content

Generally speaking, an *intranet* is a secure network within an organization, which is used to share files and information both locally and remotely if appropriate. An *extranet*, by contrast, extends the network’s audience by including individuals or groups outside the organization. It is usually designed as a secure Internet connection, with access controlled by the hosting organization. Content is likewise managed by the organization that owns the network. An extranet can be used to allow entities like business partners or customers to access selected information from within your organization, or to perform such functions as placing an order, examining inventory levels, providing sales figures, or sharing reports online. This allows a company to work more closely with its partners and customers and provide a higher level of service.

Very complex and sophisticated uses of an organization’s intranet and extranet become possible with the incorporation of Web-enabled applications that provide capabilities such as *business intelligence* and *electronic document management*.

- Business intelligence tools, placed on an intranet, allow the appropriate employees throughout the organization to view static or dynamic files related to company strategy, performance, expenses, employees, and so forth. This can result in faster, more effective decision-making at all levels of the company.
- Electronic document management gives an organization with an intranet the ability to control and manage documents and corporate information.

You may wish to create links to your existing extranet content on workgroup navigation pages or on the enterprise outline, depending on whether the extranet content is relevant to a particular workgroup or to every employee.

Commercial or Web content

There are many useful Web sites and Internet tools to help organizations and individuals in their day to day work activities. These include:

- Stock prices and quotes
- Weather information
- Currency exchange rates
- News and information services

You can include any of these, and more, on your portal. Links to various sites, or even tickers or Java applets, can be placed directly on the portal pages.

As an example, we will create a three-paned frameset that displays news, weather and stock prices and pull it into the content frame using the Enterprise Outline.

Creating a news frameset

To create the news frameset described above:

1. Open Designer and create a new frameset in the portal database by selecting Create - Design - Frameset from the menu.
2. At the "Number of frames" drop-down box, select three frames. Next to Arrangement, click the frame arrangement shown on the left, then click OK. The left frame will contain the news, the bottom right frame the weather, and the top right frame will contain stock price information.
3. Select Frame - Frame Properties from the menu and click on the Frame Info tab, the first from the left.
4. Click in the left frame so it has the focus and type in the title, "News."

5. Leave the Type as “URL” and type in a URL of your favorite Internet news service. For example, to use My News from AOL, which has been specifically designed for Lotus Domino users, type the URL:

   `Http://lotus.aol.com/news/home.adp`

   Press Enter and the My AOL news stories will appear in the frame when you are connected to the Internet.

6. Click in the bottom right frame so it has the focus and type in the title, “Weather.”

7. Leave the Type as “URL” and type in the URL of your favorite Internet weather service.

8. Click in the top right frame so it has the focus and type in the title, “Stocks.”

9. Leave the Type as “URL” and type in the URL of your favorite stock quotes service.

10. Select Frame - Frameset Properties from the menu and type the title, “News” for the frameset.

11. Resize the frames in the frameset by dragging the borders until the information fits in the frame.

Your frameset should now look something like this:

12. Select File - Save and File - Close to save and close the frameset.

Note These Internet news URLs are only examples of what it is possible to display in a frameset, and are meant only as a guide.

Customized news
Using the same steps described above, you can create separate news framesets for each workgroup to personalize the news that workgroup users see. For example, for a finance workgroup you may wish to show financial news, currency exchange rates, and stock price information. An information systems workgroup would be more interested in technology news and computer product announcements, while the human resources workgroup would want employment notices from the local papers, State department alerts for their traveling executives, and insurance company updates.

Adding a link to the news frameset

We will now link the news frameset to the Enterprise Outline, so that every user of the portal can view the news.

To add the news frameset link:

1. Open Designer, select the portal database and click the design element, Outlines.
2. Open the Outline "Enterprise Content."
3. Select Create - Outline Entry from the menu and type the title, "News" in the Label field.
4.  In the drop-down list for Content Type, select "Named Element" and click the folder icon.
5. Select "Frameset" in the "Kind of object" drop-down list, select the frameset "News" from the Frameset drop-down list, and click OK.
6. In the Outline Entry properties box, type a value of "Right" for the Content Frame.
7. You may reposition the "News" outline entry in the list by clicking and dragging it to a new position.
8. Select File - Save and File - Close from the menu to save and close the outline.

You can follow this procedure for any Internet content you want to add to the portal.

Using search in a portal

Searching is an important part of a portal, allowing users to discover and retrieve information. Some examples of the things your users might want to search for are:

- Documents on your intranet related to a specific product or service
- Documents in Domino applications and on file systems in the Domino domain
- People in your domain and on the Internet
- All the hotels in Nova Scotia that advertise on the Web and offer a corporate discount

The portal will pull together, in one place, all the search engines needed to perform these different types of searches.

Setting up the search form

In a previous section we described how to create a search form. To that form we will now add the capability for the user to input search criteria, search the Internet using popular search engines, and search the Domino Domain. You can also add links to this form for any current search engines you may have on your intranet.

Domino Domain search

In this example we will add Domino Domain search, which allows users to search an entire Notes domain for documents, files, and attachments that match a search query. Domain search is centralized on a Domain Catalog server, which uses a Domain Catalog to control which databases and file systems to index. Domain Search also filters results to users based on their access to the indexed databases and file systems.

The Domain Indexer builds a central Domain Index on the Domain Catalog server that all Domain Search queries run against. The Domain Catalog can replicate to other servers. The Domain Indexer generates the index files directly on the Domain Catalog server, and these files do not replicate to other servers. If your organization has more than six to eight Domino servers, we strongly recommend that you dedicate a server as the Domain Catalog server. This computer should have no other purpose than to act as the indexing and search engine for the domain. More information on Domino search is in the online database, *Domino 5 Administration Help* database.

Internet and directory searches

In this example we will also add the capability to perform an Internet search, using popular Internet search engines like AltaVista and Lycos.

Directory search capability will also be added to the portal, allowing users to search for people in all searchable directories, including their own Domino directory, and LDAP or Internet directories like four11.com or bigfoot.com.

Setting up the search form

We will use code found in the bookmarks database, bookmark.nsf, to set up and customize the search form. This database is installed automatically on Notes clients.

1. Copy the code from bookmarks.nsf into the Search form for the search fields:

   a. In the Designer client, select File - Database - Open from the menu.

   b. In the Open Database dialog box, type in “bookmark.nsf” in the Filename entry field and click Open.

   c. Open the form “HPSearch.”

   d. Select Edit - Select All from the menu to highlight everything in this form.

   e. Select Edit - Copy from the menu to copy everything to the clipboard.

   f. Select File - Close from the menu to close this form.

   g. Select the portal database and open the Search form from the Forms design element link in the Bookmark Bar.

   h. Click in the very top of the form, above the table, and select Edit - Paste from the menu. This will paste the entire contents of the form that was in the bookmarks database.

   i. There are a few extra objects we need to copy from the bookmarks database. Open the bookmarks database in the Designer again and expand the Resources design element category by clicking it, then select the Shared Fields design element.

   j. Click once on the “SearchSites” shared field entry. A shared field is a field that can be used in more than one form, so you can define a field once and reuse it.

   k. Select Edit - Copy from the menu.

   l. Return to your portal and click on the portal’s Shared Fields design element and select Edit - Paste from the menu. This will paste the “SearchSites” shared field into your portal.

   m. We also need to copy the Script Libraries “ DBSearch” and “SortedContainer” from the bookmarks database. These scripts compute the search. Open the bookmarks database again.

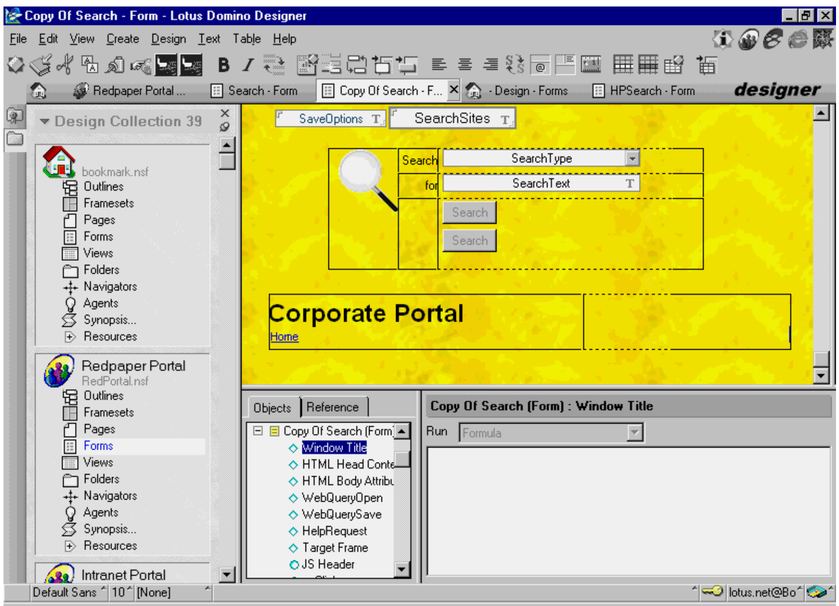
   n. Expand the design element category, Resources and click on Script Libraries.

o. Select the Script Libraries " DBSearch" and "SortedContainer" by pressing and holding the Ctrl key while clicking each entry. Select Edit - Copy from the menu and select File - Close and return to your portal.

p. Expand the design element category Resources and click on Script Libraries in your portal, then select Edit - Paste from the menu to paste in the script libraries "DBSearch" and "SortedContainer."

Note If the script libraries "DbSearch" and "SortedContainer" are not in your boomark.nsf, you are using a version of Lotus Notes prior to Lotus Notes Release 5.01. In this case use the script library, "FormulaBuilder" instead.

Your form should now look like this:



2. Now that we have copied the fields we need for the search form, we need to format the Search fields so they fit in our top frame:

a. Highlight *only* the field "SearchType", and select Edit - Cut from the menu.

b. Click in the right hand cell of the table that contains your portal title or logo, set the type size to eight point, and type the label "Search."

c. Select Edit - Paste from the menu to paste the "SearchType" field into the cell.

d. Press Enter to move down to the next line.

e. Highlight *only* the field “SearchText” and select Edit - Cut from the menu.

f. Click on the line under the “SearchType” field, set the type size to eight point and type the label, “for.”

g. Select Edit - Paste from the menu to paste the “SearchText” field into the cell.

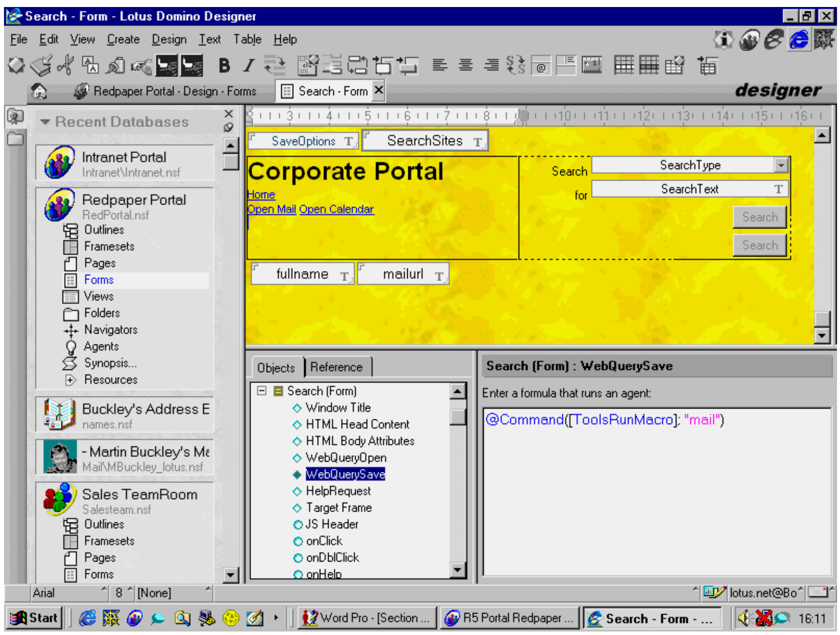
h. Press Enter to move down to the next line.

i. Highlight both “Search” buttons and select Edit - Cut from the menu, then paste them under the “SearchText” field.

j. We now want to right justify all the content of this cell. Select all the content of the right cell only and select Text - Align Paragraph - Right from the menu.

k. Highlight and delete the entire table from which the search fields and buttons were cut.

Your form should now look like this:



3. To add the Domain Search functionality for Web browser users, you will need to make sure you have set up a Domain Search database from the Catalog (5.0) template on the Domino Server. This is explained in the online database, *Domino 5 Administrators Help.*

a. Type the label, “Domain Search” in the right cell on the next line down from the button, “Search” and highlight the text.

b. Select Create - Hotspot - Link Hotspot from the menu.

c. In the Hotspot Properties box, change the Type to "URL" and type the URL:

```
../<catalog>/<searchform>
```

where <catalog> is the name of your Domino catalog database and <search form> is the name of the Domain Search form in your Catalog database.

4. This step uses the Domino Directory search available in the Notes e-mail database to add the directory search link for Internet users.

a. Move the cursor to the right of the "Open Calendar" text and type the text, "Search Directory."

b. Highlight the text and select Create - Hotspot - Action Hotspot from the menu.

c. In the Frame field of the Action Hotspot properties box on the Hotspot Info tab, type the Frame name "Right." This will target the directory search in the Right content frame of the portal.

d. In the Programmer's Pane, select "Formula" from the drop-down list and type the following formula:

```
FIELD mailurl := "/wAddress?OpenForm";

@Command([FileSave]);

@Command([FileCloseWindow])
```

e. Highlight the entire line.

f. Select Text - Text Properties from the menu and click on the Paragraph Hide When tab, fourth from the left.

g. Select the option "Hide from Notes 4.6 or later." This will hide the whole line from Notes users, as these links are not relevant to them. You can also link to or use any standard LDAP directory search tool.

5. This step adds directory search for Notes users.

a. Move to the next line down, type the label, "Directory Search," and highlight the text.

b. Select Create - Hotspot - Action Hotspot from the menu.

c. Uncheck the option "Show border around hotspot" in the Action Hotspot properties box.

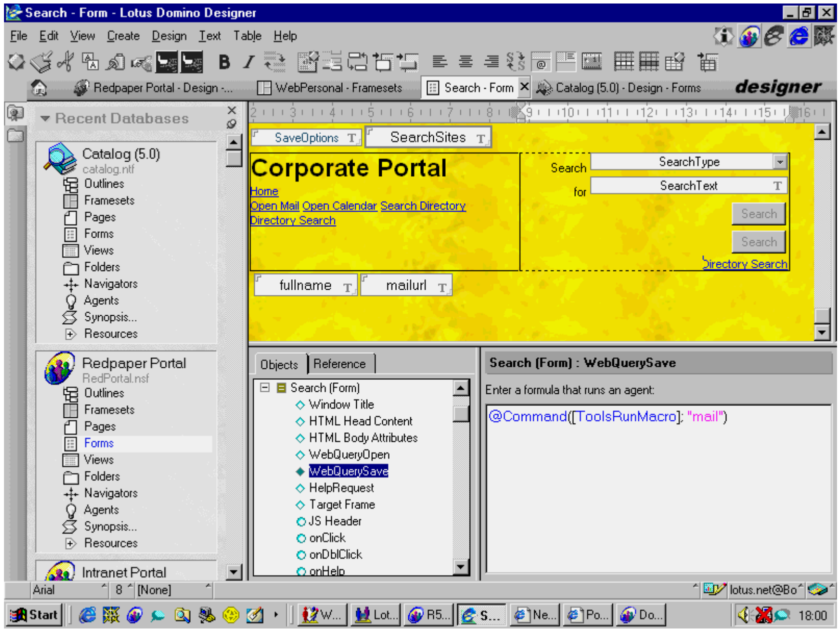
d. In the Programmers Pane enter the formula:

```
@Command([MailAddress])
```

e. Highlight the text and select Text - Text Properties from the menu, then click on the Paragraph Hide When tab, fourth from the left.

f. Select the option "Web browsers." This will hide this whole line from Web browser users as these links are not relevant to them.

6. Your completed Search form should look like this:



7. Select File - Save and File - Close from the menu to save and close the form.

Wrapping it all up

So far in this exercise we have created a framework for a portal, created navigation and content pages, utilized existing content, and created some new content containers. We will now fit all the pieces together by describing how to create an administration interface, a default home page and a navigation page. Finally, we discuss ways to personalize the interface.

Creating an administration interface

The administration frameset gives the administrator of the portal the ability to see and edit all pages.

Creating the administration frameset

An administration frameset is created using the following steps:

1. Open Designer and select the portal database.

2. Select Create - Design - Frameset from the menu.
3. At the “Number of frames” drop-down box, select two frames. Next to Arrangement, click the first arrangement for the frames.
4. Click OK. The frameset with the chosen layout appears.
5. Open the Frameset Properties box.
6. At the Basics tab:
   - Name the frameset “Administration.”
   - Add a comment. The comment appears with the initial list of framesets in the Work pane. Type “This is the Admin frameset.”
7. Select Frame - Frame Properties from the menu and click on the Frame Info tab, the first from the left.
8. Click in the left frame so it has the focus and type in the frame title, “Left.”
9. Click in the right frame so it has the focus and type in the frame title, “Right.”
10. Select File - Save from the menu to save the frameset.
11. Now that we have the frameset, we need the administration content which will describe in the next section. The left hand frame will contain a view of all documents and pages in the portal. The right frame will display each document or page when it is selected.

Creating a navigation page

The following steps describe how to create a sales navigation page for the Sales Portal. The same steps would be used to create a navigation page for any other portal.

1. In Designer, select the portal database and select Create - Database Navigation from the menu to create a sales navigation page for the left frame of the Sales Portal.
2. In the Status Field, click the “Active” radio button option.
3. Select “Admin Navigation” in the Title field.
4. The Body field is where we create links for the Sales workgroup users to use when in the administration interface. Type the title, “Admin” in a large, bold type, around 18 point. You can also choose to import or paste a graphic here.
5. Highlight the title or graphic and select Create - Hotspot - Link Hotspot from the menu.
6. In the first tab of the Hotspot Resource Link properties box, select “Named Element” from the Type drop-down list and choose “Frameset” in the field to the right.

7. In the Value field, type “Administration” and in the Frame field, type “Main.” When the user clicks the link “Admin,” the frameset “Administration” will open up in the frame named “Main.” Since the “Main” frame is the bottom frame of the “Portal” frameset, the “Administration” frameset will be nested inside the “Portal” frameset.
8. Press Enter to move down a line and select Create - Embed Element - View from the menu.
9. Select the view “Pages” from the list and click OK.
10. In the Embedded View properties box, type “Right” for the Frame field. This will target the document into the “Right” frame when the user selects a document.
11. Change the Web Access Display drop-down list to “Using HTML” as we don’t need to view Java applet properties.
12. On the Display tab, second from the left, adjust the Width and Height fields to fit into the left frame of the Administration frameset and select the “Show contents only (Don’t show title)” in the Display option.
13. Select File - Save, then Edit - Copy As Link - Document Link from the menu.
14. Open the Designer and the Administration frameset.
15. Click in the left frame and select Edit - Paste from the menu to paste in the Admin Navigation page.
16. Adjust the width of the left frame by clicking the frame divider and dragging it to the new position, if needed.
17. Adjust the frame borders, frame size, and scroll bars to match the other framesets.
18. Select File - Save and File - Close from the menu to save and close the Administration frameset.

You have now created an Administration interface for your portal. The next section describes how to link all the portal elements together.

Creating the default portal home frameset

When a user first opens a portal, a home frameset is displayed. The top frame in the portal will always be the Search form, the left frame will be the Portal Navigation Page and the right frame will be the Portal Home page.

Note The layout and definition of the home portal described above is not a required design. Once you have mastered the steps to create the various portal elements, you will be able to design just about any configuration, and include any information and links you want.

Creating a portal navigation page

We have already created the Home frameset and nested it inside the main Portal frameset. Now we will create a Navigation Home page to link the framesets together.

1. Open Designer and select the portal database.
2. Select Create - Database Navigation from the menu.
3. Select the Status field as “Active” and choose “Portal Navigation” in the Title field.
4. The Body field is where we create the links to the other framesets for the user to navigate around the portal. Type the title, “Portal Home” in a large, bold type, around 18 points. You can also choose to import or paste a graphic.
5. Highlight the title or graphic and select Create - Hotspot - Link Hotspot from the menu.
6. In the first tab of the Hotspot Resource Link properties box, select “Named Element” from the Type drop-down list and choose “Frameset” in the field to the right.
7. In the Value field, type “Home” and in the Frame field, type “Main.” When the user clicks on the link “Home,” the frameset “Home” will open up in the frame named “Main.” Since the “Main” frame is the bottom frame of the “Portal” frameset, the “Home” frameset will be nested inside the “Portal” frameset.
8. Press Enter twice to move down two lines and change the type to something small and plain, around eight or nine points.
9. Now we will create links to all the other framesets that exist in the database.
   a. Type the frameset name you want to link to, for example “Sales,” highlight the text, and select Create - Hotspot - Link Hotspot.
   b. On the first tab of the Hotspot Resource Link properties box, select Type as “Named Element,” and click the folder icon. The Locate Object dialog box opens.
   
   c. Click the drop-down list arrow in the field Kind of object and select “Frameset.”
   d. Click the drop-down list arrow in the Frameset field and select the frameset you wish to link to. Click OK.
   e. In the Frame field, type “Main” so the portals nest inside the Portal frameset.

Follow this procedure until you have a link to each of the workgroup framesets, including the Administration frameset. You may want to hide the

Administration link from everyone by using a Hide-When formula for that paragraph. You could create a role for administrators in the database ACL if you didn't want to give the administrators designer access to the database. This is explained in detail in the online database, *Domino 5 Administrator Help*.

10. Select File - Save and Edit - Copy As Link - Document Link to save the page and copy it to the clipboard.
11. Open Designer and select the Home frameset.
12. Click in the left frame and select Edit - Paste from the menu to paste in the Portal Navigator page.

Creating a portal home page

Now that we have the left pane for our home frameset, we can create a Home Page.

1. In Designer, select the portal database and select Create - Pages from the menu.
2. Choose the "Active" radio button for Status.
3. Select "Portal Home" as the title.
4. Create your home page in the body field. This could be content such as company-wide information and embedded views for news, instructions on the portal and its use, or just about anything else you can think of. Since every organization has unique, individual requirements, we will not even try to enumerate all the uses to which you can put your home page.
5. Select File - Save and File - Close to save and close the page.
6. Open Designer and select the Home frameset.
7. Click in the Right frame and select Frame - Frame Properties from the menu.

8. Leave Type as "URL" and click on the Formula button.
9. To show the Active Portal home page, we look up the Active Pages view and return the Notes URL that exists in the send column. We use the database replica id in place of the database name so the lookup will work no matter where the database resides. If the user is using a browser to access the portal, the pages will be accessed via the Web URL.

   Type the following formula in the formula dialog box:

```
NotesURL := @Text(@DbLookup("";"<your portal database
replica id>";"AP"; "Portal Home";2));

WebURL := "./AP/Portal+Home?OpenDocument";

@If(@ClientType="Notes";NotesURL;WebURL)
```

Note To obtain a portal database replica id, select File - Database - Properties from the menu and the replica id will appear on the Info tab.

10. Select File - Save and File - Close from the menu to save and close the frameset.

    The content owners can create many portal home pages. They can then specify the page to display by selecting "Active" in the Status field of the desired page, and "Inactive" in the Status field of the pages they don't want to display.

Setting a frameset to open on portal launch

When a portal is opened, a frameset is launched as the default view. We will specify the "Portal" frameset as the default view that portal users will see. Since the "Home" frameset is nested inside the "Portal" frameset, it will be included as part of the default view.

Setting the portal frameset to launch on open

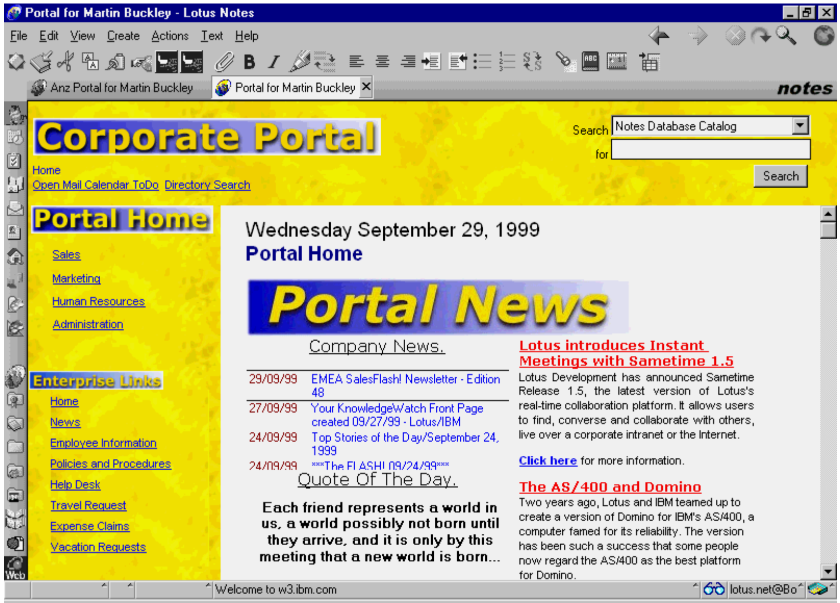
To set the portal frameset to launch when the portal is opened:

1. Open Designer and select the portal database.
2. Select File database properties and click the Launch tab, fifth tab from the left.
3. Choose "Open Designated Frameset" from the When opened in the Notes client field and choose the "Portal" frameset in the Name field.
4. Choose "Use Notes launch option" in the When opened in a browser field.

The portal frameset is now set to open in the Notes client and a browser.

Open the Notes client and open the portal database by selecting File - Database - Open from the menu and choosing the portal database from the list. Verify that all links are working correctly and make adjustments as necessary to ensure the user interfaces are consistent as you move between workgroup portals.

Your portal is now ready for user testing and should look something like this:



Personalization

One of the most important features of a portal is personalization. This is what separates a portal from just a framed intranet site. Portals that target information to specific users are a great start to knowledge management initiatives in an organization.

We have already introduced some personalization by allowing the users to see their own e-mail, and calendar and scheduling information. One of the ways to personalize the portal even further would be to open the portal at the users particular workgroup portal home page. In other words, when the user opens the portal, the portal checks to see who they are and opens the appropriate frameset for them to view. One way to achieve this is by defining user roles in the portal Access Control List and tying each individual user to a specified role.

Personalization with user roles

Every database includes an access control list (ACL) which Notes uses to determine the level of access that users and servers have to a database. Once you create an ACL, you can create one or more roles, and assign each user to a role. The role specified for each user is the basis on which specific framesets are opened for them.

For the purpose of this example, we will define a role for each workgroup and assign users and user groups to the role.

Adding user roles

For our example portal we will add the roles of sales, marketing, and HR.

1. Select the portal database.
2. Choose File - Database - Access Control.
3. Click the Roles icon.
4. Click Add.
5. Type a name for the new role, then click OK. For our example type:

   `Sales`

   `Marketing`

   `HR`

The name of the access role appears surrounded by brackets [ ].

6. To assign a name in the ACL to a role, click the Basics icon.
7. Select a name to include in the role, then select the role in the Roles box to display a check mark.

Adding the frameset formula

Once each user is assigned to a role, we have to add a formula to the framesets to make the correct frameset appear depending on the role specified for the user.

1. Open the portal database in Designer.
2. Open the Portal frameset.
3. Select the bottom frame and select Frame - Frame Properties from the menu.

4. Click the formula icon.
5. Type in the following formula:

```
@If(@UserRoles="[HR]"; "HR Portal"; @UserRoles="[Sales]";
"Sales Portal"; @UserRoles="[Marketing]"; "Marketing Portal";
"Home")
```

This formula evaluates to the names of a frameset, depending upon the role the user has in the Access Control List.

Important For this feature to work locally, make sure "Enforce a consistent Access Control List across all replicas of this database" is enabled. This is found in the Access Control List under the Advanced option.

You may choose to use this way of personalization throughout the portal to hide and show different links and jumps depending on the users' roles.

The portal in use

Specifying the portal as the default page

This portal can be used in a Web browser or a Notes Client and can be set to be the opening database when a user opens either a Notes client or their browser.

Default home page in a browser

To set the portal as the default home page in a browser, simply follow the browser's instructions for specifying a home page, pointing the browser at the Domino server and the portal's Domino database. It is a good idea to have default access in the Access Control List set to "No Access" to force users to authenticate and personalize their information.

Default home page for a Notes client

To specify the portal as the default home page for a Notes client:

1. Open the portal in the Notes client.
2. Open the bookmarks and right mouse click on the portal database icon.
3. Choose the last option "Set Bookmark as Home Page."

Your portal will now open when you open Notes.

Creating and modifying links and jumps

Maintaining the portal involves changing and adding links and jumps over time, and also updating content and the access control list. These tasks generally fall to content and workgroup editors or administrators. The portal is a very flexible entity, making these maintenance tasks easy to perform.

You can modify or add links on the Navigator pages in either of two ways:

- Double-click on the pages you wish to edit, then follow the same steps described previously to edit the page and add or change links. Save the pages when you are done. This can be done by anyone who has designer or higher authority on the ACL.

- Click the Administration link to open the Admin frameset, select the page and double-click it to open it in a new window, edit or add content and links to the page, and save.

Creating and using portal home pages

The software is set up so anyone with editor or higher authority on the ACL can create a portal home page and replace the existing Active page with this new one.

Creating a new portal home page

To create a new portal home page and use it to replace an existing one:

- Select Create - Document - Pages from the menu.
- Leave the status as "Inactive."
- Set the Title as "Portal Home."
- Create your new page following the same steps described earlier in this paper.
- Open the Admin frameset and change the current Active home page to "Inactive," and change the one you just created to "Active."
- The next time the portal is opened at this frameset the new portal home page will appear.

This makes it easy for any content editor to keep the portal up to date.

Section 3
Future Directions

This section looks ahead to what the future holds for developing portals on the Lotus Domino platform.

The future of portals using Lotus technology

In 2000, Lotus will launch a new suite of products known currently as the Lotus Knowledge Suite. While it is still too early to talk about specific functionality in the Knowledge Suite, we'd like to share with you some of the exciting features we are currently aware of that will be included in this product. The phrase "Knowledge Management" is currently the phrase of the month and is being used to describe many, many things. In reality, true knowledge management is simply being able to manage the knowledge you already have, be that within yourself, with other people in your organization, in books, in reports and so on. While we currently have some excellent tools in Lotus Notes to store and categorize this information, eventually we can come full circle and have too much information to search through. We get to the stage where we can't remember where we found a certain piece of information, which Web site we found an article on, who it was that told us about something, or we just don't know where among all the databases to start looking for something.

Lotus Knowledge Management strategy

The Lotus KM strategy has evolved rapidly over the past several months to address direct feedback received from Lotus customers, focus groups and analysts, and to react to the following specific recent requirements:

Reduced complexity

Product strategies have too many moving parts. Customers are looking for a comprehensive offering where the parts are delivered as an integrated whole. This trend is substantiated by recent acquisition trends of smaller KM companies. Lotus is providing a comprehensive KM product offering that incorporates all its recent development efforts into a single, integrated offering. Customers feel this is easier to acquire and presents a clearer value.

Compelling value

Lotus will give customers the tools in a single package to combine all the elements of Knowledge Management application building:

- Content discovery and analysis (Things)
- Skill gathering and user profiling (People)
- Personal and community organization (Places).

These will sit atop a Software Development Kit (SDK), which will blend all elements together, making the whole greater than the sum of the parts, as is the case with the Domino product line. This compelling value can be seen through the following example:

Skills gathered in the the skills element can be mapped against the categories in a catalog so people seeking information on a particular topic also see the people who know something about that topic. Furthermore, when a person is listed in a category you can see whether they are online and willing to be contacted via chat, and you can click on their profile to find out more about them. Information categorized by the discovery engine can be automatically directed to a community place where a group of members share an interest in leveraging it. The synergy among people, places and things is the essential ingredient and compelling overall value that cannot be easily achieved by mixing components from multiple vendors.

Competition

There are two principle forms of competition today: small companies that address a specific Knowledge Management problem, and large companies that can address a broader, more comprehensive view. Small companies typically serve a slice of the "People Places and Things" pie. This is not ideal for large enterprises, which must partner with several vendors to address their complete requirements. Large companies can offer more in the way of vision and support in guiding customers to implement KM solutions that cover the entire "People Places and Things" pie. Certain customers see the most compelling value being the completeness of a solution rather than it's technical elegance.

The Lotus Knowledge Suite

The Lotus Knowledge Suite will address some of today's key Knowledge Management problems. First, there will be tools that enable you to build and manage the delivery mechanism, a portal. These tools will make it simpler for developers and end users to create highly customized ways of looking at the information that is important to them. Visualize this as the current Welcome page in R5 becoming much more functional and customized to you as an individual, and to the organization.

While being able to create a portal is important, the most interesting work is happening on the server with something called *Discovery Engines*.

The first thing you can expect from the Discovery Engines is an *Expertise Locator*. In simple terms, it's like the Domino directory in that it contains a list of peoples' names but allows these people to add their interests and areas of expertise. The *Knowledge Locator* then establishes connections between these people and their skills so that searching for information on one person will also show you information on other people with related skills and interests. Once you've found the person or group with the skills you were searching for, the Knowledge Locator enables you to contact these people and will even let you know if they are online and available for a conversation.

Complementing the Expertise Locator is the *Content Catalog*. The Content Catalog searches other sources of information and connects the two together in context to discover the meaning, value and relationship of a piece of information.

What does this mean for the end user? If I initiate a search from my portal for information relating to, say ice cream, I will not only get back the usual list of articles I can expect today, but I will also be given a list of people that know about ice cream. If they are online and using a product such as Sametime, I could start a conference with these people and ask them first hand my exact question, as though I had them in the same room with me. I would also be able to look at other pieces of information related to ice cream, such as sorbet, kitchen hygiene or recipes.

More information will be made available on the Lotus Web site in the coming months, at

`http://www.lotus.com`

In addition, there will be sessions on portals and portal tools at Lotusphere Berlin 1999 and Lotusphere Orlando 2000. Find out more about these conferences at:

`http://www.lotus.com/lotusphere`

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This publication is intended to help you develop applications using Lotus Domino Release 5.01.

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The publications listed in this section are considered particularly suitable for a more detailed discussion of the topics covered in this redpaper.

International Technical Support Organization Publications

For information on ordering these ITSO publications see, “How To Get ITSO Redbooks.”

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- *Lotus Solutions for the Enterprise, Volume 2. Using DB2 in a Domino Environment*, IBM form number SG24-4918, Lotus part number CT69BNA
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- *Enterprise Integration with Domino for S/390,* IBM form number SG24-5150

Other Lotus-Related ITSO Publications

The publications listed in this section may also be of interest:

- *A Roadmap for Deploying Domino in the Organization*, IBM form number SG24-5617, Lotus part number CT6P8NA
- *The Three Steps to Super.Human.Software: Compare, Coexist, Migrate; From Microsoft Exchange to Lotus Domino, Part One: Comparison*, IBM form number SG24-5614, Lotus part number CT7QTNA
- *The Three Steps to Super.Human.Software: Compare, Coexist, Migrate; From Microsoft Exchange to Lotus Domino, Part Two: Coexistence and Migration*, IBM form number SG24-5615, Lotus part number CT7QWNA
- *Lotus Notes and Domino R5.0 Security Infrastructure Revealed*, IBM form number SG24-5341, Lotus part number CT6TPNA
- *Lotus Notes and Domino: The Next Generation in Messaging. Moving from Microsoft Mail to Lotus Notes and Domino*, IBM form number SG24-5152, Lotus part number CT7SBNA
- *Eight Steps to a Successful Messaging Migration:A Planning Guide for Migrating to Lotus Notes and Domino*, IBM form number SG24-5335, Lotus part number CT6HINA
- *Deploying Domino in an S/390 Environment*, IBM form number SG24-2182, Lotus part number 12957
- *The Next Step in Messaging: Case Studies on Lotus cc:Mail to Lotus Domino and Lotus Notes*, IBM form number SG24-5100, Lotus part number 12992
- *Lotus Notes and Domino: The Next Generation in Messaging. Moving from Novell GroupWise to Lotus Notes and Domino*, IBM form number SG24-5321, Lotus part number CT7NNNA
- *High Availability and Scalability with Domino Clustering and Partitioning on Windows NT*, IBM form number SG24-5141, Lotus part number CT6XMIE
- *From Client/Server to Network Computing, A Migration to Domino*, IBM form number SG24-5087, Lotus part number CT699NA
- *Netfinity and Domino R5.0 Integration Guide*, IBM form number SG24-5313, Lotus part number CT7BKNA
- *Lotus Domino R5 for IBM RS/6000*, IBM form number SG24-5138, Lotus part number CT7BHNA
- *Lotus Domino Release 4.6 on IBM RS/6000: Installation, Customization and Administration*, IBM form number SG24-4694, Lotus part number 12969
- *High Availability and Scalability with Domino Clustering and Partitioning on AIX*, IBM form number SG24-5163, Lotus part number CT7J0NA
- *Lotus Domino for AS/400: Installation, Customization and Administration*, IBM form number SG24-5181, Lotus part number AA0964

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